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CONSUMERS' RESEARCH

Bulletin

July 1947

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CONSUMERS' RESEARCH

Vol. 20 • No. 1 **BULLETIN** July 1947

Off the Editor's Chest

VIGOROUS resistance by consumers to present prices of many of the commodities that everyone buys is forcing retailers to make at least some semblance of price reductions. Even the much discussed Newburyport plan of store-wide reductions, however, ran into the problem of resale price maintenance, euphemistically called "fair trade" practices, which prohibited stores from lowering prices on certain lines of tools, hardware, optical goods, power equipment, drugs, cosmetics, and other items.

Resale price maintenance, sanctioned by law in some 45 states, has been defined as a system of setting retail prices on trademarked, branded, or otherwise identified products by which the manufacturer, by contract with the distributor, sets the minimum price at which his product or line of products can be sold at retail. Furthermore, by entering into a contract with one distributor in a given locality and then simply serving notice on the other distributors, he is permitted by federal and state laws to require all distributors to sell his products at prices not below the ones he has specified. This practice has received legal sanction from the Miller-Tydings Act which secures the manufacturer from prosecution under the anti-trust laws (that prohibit other restraints of trade and concerted actions to raise prices or prevent their decline). The proponents of this type of legislation insist that it protects the frugal American housewife from being taken in by "bait merchandise" and "loss leaders"—much used by chain stores and "smart merchandisers" to get people into the store—and protects the small retailer from "unfair competition" of large concerns with greater capital than he is able to command.

Before the last war, resale price maintenance was a failure in all lines, such as electrical appliances, in which competition for the consumer's dollar was keen. Service guarantees and turn-in of old models served as effective means of indirectly cutting the price to a shrewd or sales-resistant purchaser. In a study of retail price maintenance by the Federal Trade Commission, made public in 1945, it was shown that price maintenance was most prevalent in proprietary drugs, cosmetics, toilet goods, books, and liquor, where in some cases "distinctive advertising or pricing. . .give the articles special value or merit in the minds of some consumers." These are, of course, typically *high-profit items*, where the cost of marketing and advertising constitutes a very large proportion of the total selling price. The Commission observed that it was primarily the druggists, rather than the manufacturers, who were most vociferous in demanding that prices be maintained, going so far as to boycott products on which "fair trade" contracts were not established. According to the Commission's report, such contracts made certain cosmetics cost the purchaser 9 to 11 percent more and toothpastes 6 to 11 percent more than in stores where retail price maintenance was not in effect.

During the war, while the Office of Price Administration was in existence, OPA price ceilings

(*Continued on page 19*)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, Helen P. Alleman, A. R. Greenleaf, and Charles L. Bernier. Editorial Assistants: Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; **1, 2, 3**—relative prices, **1** being low, **3** high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; **46, 47**—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least a month before it is to take effect, accompanying your notice with statement of your old address with name in full. At least three weeks' notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

¶*CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.*

★★★For a brief cumulative index of 1947 BULLETINS preceding this issue, see page 20.

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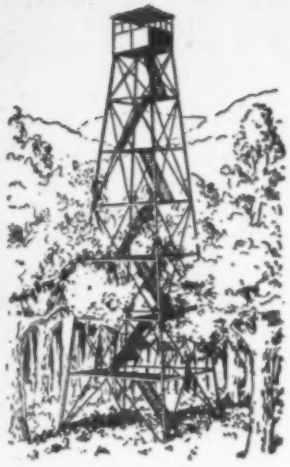


The Consumers' Observation Post

PRICES FOR COTTON GOODS are going down, although they are still considerably above those of pre-war days. Supply appears to be catching up with demand, and The Wall Street Journal reports a slowing up of orders to southern mills. The continuing high price level is largely due, according to cotton mill men, to the fact that raw cotton prices are more than triple the 1939-40 rate of 10 cents a pound, and wages are double the peacetime level. It is such costs, they claim, that have brought about the the price increase of a particular cloth used for dresses and shirts from 7 cents a yard to 20 cents under OPA and 23 cents per yard at present. Consumer resistance, however, is having its customary effect, and price reductions have been made in cotton towels, cotton mattresses, chenille bedspreads, and luxury-type sheets. It is expected that prices on other items will need to be cut to induce price-conscious consumers to buy.

* * *

FOREIGN TRAVEL is again being encouraged by various European governments as a method of obtaining much-needed American dollars. The canny tourist, however, will be well advised to wait until citizens of such countries show their cooperation with their governments' policies in this respect by displaying hospitality and cordiality to travelers from abroad. Early in May, according to a press association dispatch, French customs officers went on a so-called "zeal strike" for higher wages which involved enforcing custom regulations "to the letter." Travelers were required to strip so that custom inspectors might search their clothing thoroughly, and the contents of bags and suitcases were gone through with a fine-tooth comb. Customs officials are difficult enough to deal with at any time, but under such conditions they would certainly prove a potent argument for postponing a European pleasure trip. Another drawback, for those who do not know the joys of traveling light, is the fact that baggage porters in certain sections are reported to be practically non-existent.

* * *

THE KIND OF BREAD that grandma used to make is frequently preferred by discriminating consumers to the white, light, tasteless loaf of ordinary commercial baker's bread. Many small bakeries have effectively catered to this demand by turning out a high-quality home-style loaf. One of the most successful is the Pepperidge Farm brand, made at Norwalk, Conn. Recently, columnist Mark Sullivan reported that his secretary was no longer able to secure this bread at her local grocer's because of a "protest" by the local bakery union. On inquiry from a local newspaper, an official of the bakery union is reported to have commented that there was nothing new in the situation since the union had been trying for many years to stop the sale of bakery goods made in non-union shops. The quality of the product or the consumers' right to buy it, be it noted, was not taken into consideration.

* * *

AMERICAN WOMEN are going to be forced to buy almost complete new wardrobes this fall, if the clothing trade has its way. The president of one speciality shop publicly predicted that longer skirts alone will make obsolete 80 percent of women's present clothing. There is some indication, however, that women will put up stiff resistance to the accelerated fashion trend. Wherever possible, hems will be let down. Possibly the present disinclination of women to buy dresses and coats, that department stores have been complaining about, is not due solely to high prices, but to the fact that women are well aware of what the clothing trade is up to.

COFFEE, once so scarce that it had to be rationed, is now in overabundant supply. According to one report, it is piling up in warehouses. Housewives, however, appear to be buying as much as usual in spite of high prices. Retailers are found in some sections to be overstocked and that means a lot of stale coffee will have to be unloaded on the uncritical purchaser.

* * *

STEAKS are now to be had at the famous Gallagher's Steak House in New York City for only $2.75 according to the headline of a recent advertisement. The word "only" is Gallagher's term for it. Some of us can still remember when a bang-up steak dinner with all the trimmings and several courses was ONLY $1.50, and we're going to wait for those days to return before we eat many steaks at public restaurants, no matter how famous they are.

* * *

P & S - PURITY AND SAFETY, later called P & S - Private Seal toothbrushes have recently been the subject of a cease and desist order by the Federal Trade Commission. It appears that representations were made in various ways that these toothbrushes were "sterilized," whereas the Commission found that they were not in fact sterile and free of pathogenic bacteria. The product was made by the Owens Staple-Tied Brush Co. for Associated Merchandising Corporation and sold by its associated stores including such well-known establishments as Bloomingdale Brothers, Bullock's, Burdine's, Wm. Filene's Sons Company, J.L. Hudson Co., Stix, Baer & Fuller Co., Strawbridge & Clothier, and a number of other stores.

* * *

FUEL OIL FOR OIL BURNERS may be scarce in certain sections this winter, particularly in the Midwest, warn the industry's experts. The difficulty appears to be due to production bottlenecks and equipment shortages. Householders who can affort to do so would perhaps be well-advised to put in an extra tank (with due regard to Underwriters' requirements), that will enable them to lay in the largest possible proportion of their winter's supply during the summer months.

* * *

DOES THE GOVERNMENT HAVE THE RIGHT to take away from an individual a therapeutic device which he has purchased which, while not inherently dangerous, might have some indirect undesirable effect? "No," holds a U. S. District Court judge in Oregon. A quack medical contrivance called Spectro-Chrome was purchased by a man for the use of himself and his mother. The federal government attempted to seize the device from him on the grounds that it was shipped in interstate commerce, labeled with false and misleading claims as to its therapeutic capabilities. The purchaser, on the other hand, insisted that he was satisfied with it and resisted the government's action. The federal attorneys argued that the device was indirectly dangerous because the ailment of the user was aggravated by failure to consult competent medical authority. The court, however, held that there was no legal basis to sustain the government's action, pointing out that it was nothing more than "a well intentioned effort by high-minded and zealous officials to protect a man from what they deem to be folly, to the extent of following him into his home and family and there divesting him of property." We think the Court was wise, and keenly aware of the principles that used to be taken for granted as characteristic of the American way of life.

* * *

SHOE PRICES are due to come down this summer. That is the private conviction of many shoemen in off-the-record conversations. Consumers have been staying away from shoe stores in such numbers that the factories in some sections of the country have experienced noticeable letdowns in production. Consumers just won't pay the high prices presently charged. There is some suggestion that shoe manufacturers will replace the high-priced lines that they have been making with the medium-priced lines that have seldom been seen since pre-war days. It is to be hoped also that they will do something drastic about the present low quality of children's shoes, about which mothers complain bitterly.

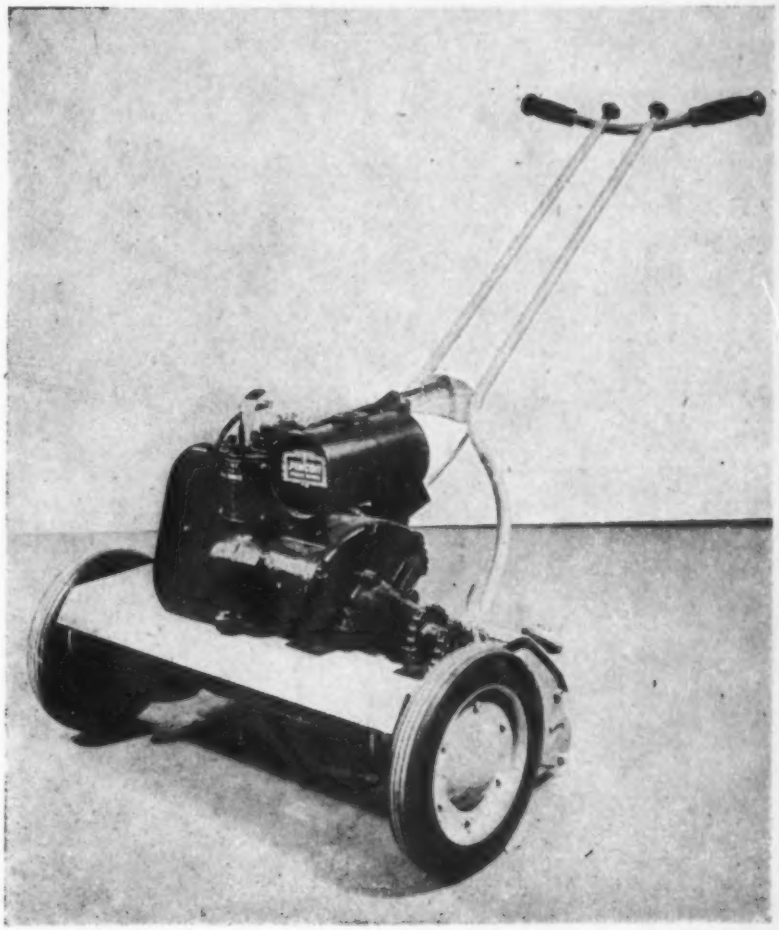
* * *

LABOR COSTS which are 50 percent higher in the building industry than in 1939, and material costs (which include labor charges, of course, as well as

(Continuation of this section is on page 29)

Power Lawn Mowers— Preliminary Report

THE following report is to be considered tentative, as in order to get information to subscribers at the earliest possible date, the available data had to be put in form for publication without waiting to make actual grass-cutting tests with all the various mowers. (The mowers became available for purchase only a short time before the preliminary tests were made.) The remaining tests, which will be reported later, may possibly modify the following ratings in some cases; the judgments hereafter are based chiefly on an examination of constructional details and hardness tests of the blades and bed knives. (Two of the mowers became diverted to the wrong destination through an error in the railroad's handling of the freight shipment, and were not available for checking against the original report of our consultant at the time this report went to press.)



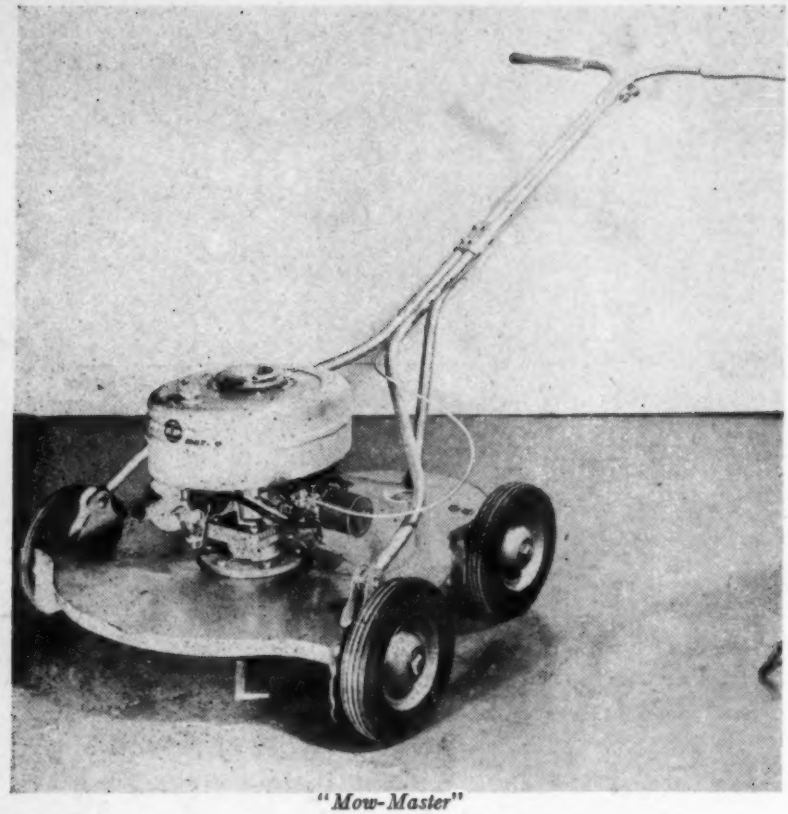
Pincor P-20

At the time the samples were purchased, the supply was very short, and the selection of brands was limited to the few available in the desired price range. It was noted that as a class the vertical shaft, rotating-arm type mowers appeared to be greatly overpriced, considering the fact that they are a very simple device; in fact, satisfactory mowers of this type can be put together with certain advertised parts, by a competent home craftsman.

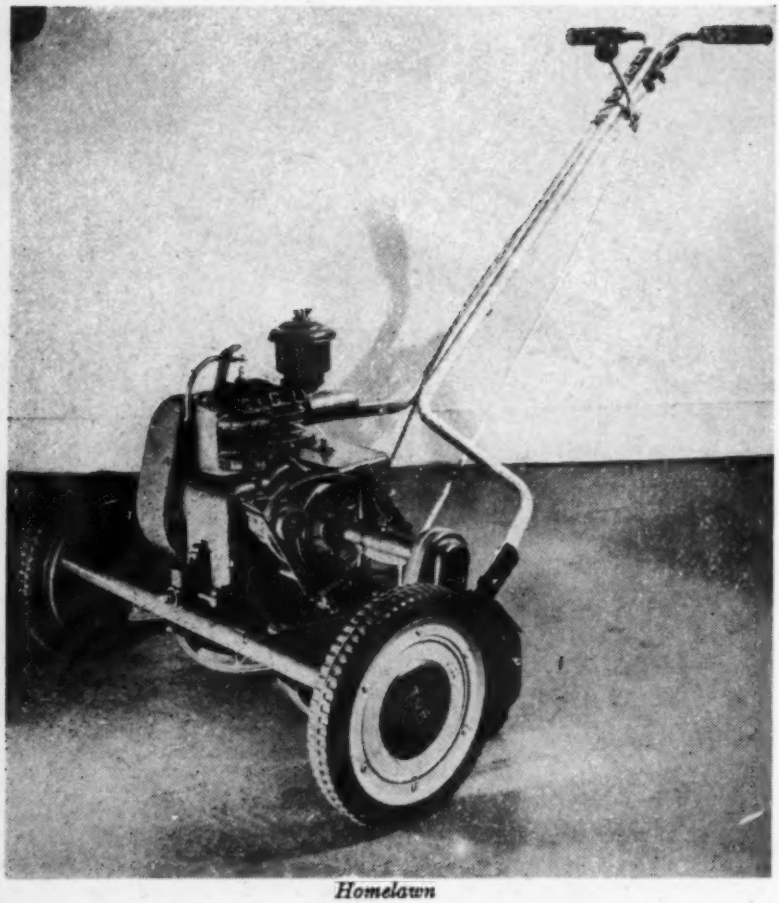
There would seem to be no point in anyone's purchasing a power lawn mower, at least of the rotating-reel (horizontal-shaft) type *which is not self-propelled.* One mower that had to be pushed by the user (*Cyclo-mower*) was included in the tests and there appeared to be little advantage in its use, as pushing a 75-lb. mower about is a real chore (as compared to pushing a hand mower weighing around 35 pounds) even though the actual cutting is done by the motor.

With the smaller sizes of rotary flat-knife type of mowers, the situation is somewhat different, for these can be made light enough that they require only a moderate effort to push.

Another important point is that the type of mower that uses a pair of cutting blades rotating in a horizontal plane is extremely difficult to guard against serious accident to the user, a child, or a pet animal, and such mowers are likely to



"Mow-Master"



Homelawn

be much safer if not self-propelled. This question, however, will have to be developed in a later discussion after the lawn-cutting tests have been completed.

Mowers of both cutter types powered with 110 volt a-c electric motors are available, but were not included in the tests. CR does not recommend their use, particularly on large lawns and lawns having shrubbery or trees, because of difficulties that would almost certainly be encountered with the long trailing power supply cord.

In order to build up as quickly as practicable a fund of experience with use of lawn mowers, CR will be glad to receive and file reports from owners on the advantages and shortcomings of their particular power mowers, especially from persons who have had such a mower or mowers for a considerable period. Reports should include judgment of ease of operation, ease with which adjustment of reel can be made, frequency of sharpening required, whether power available is sufficient, general convenience and handiness, safety, any suggestions for improvement which are felt to be desirable.

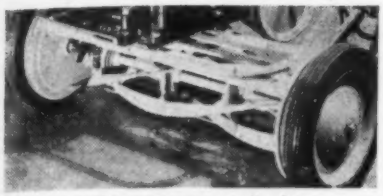
In mowing lawns, the grass should not be cut too short (about 1½ in. is satisfactory—2 in. in very dry weather).

All of the gasoline engines with which the mowers were equipped were of the single-cylinder air-cooled type and unless otherwise noted were equipped with oil-bath type air cleaners.

NOTE: A gasoline motor unit adapted for application to a standard lawn mower, electric motor storage battery operated mower and units to permit building a motor of the rotary-knife

type will be reported in an early BULLETIN.

Rotating-Reel Type

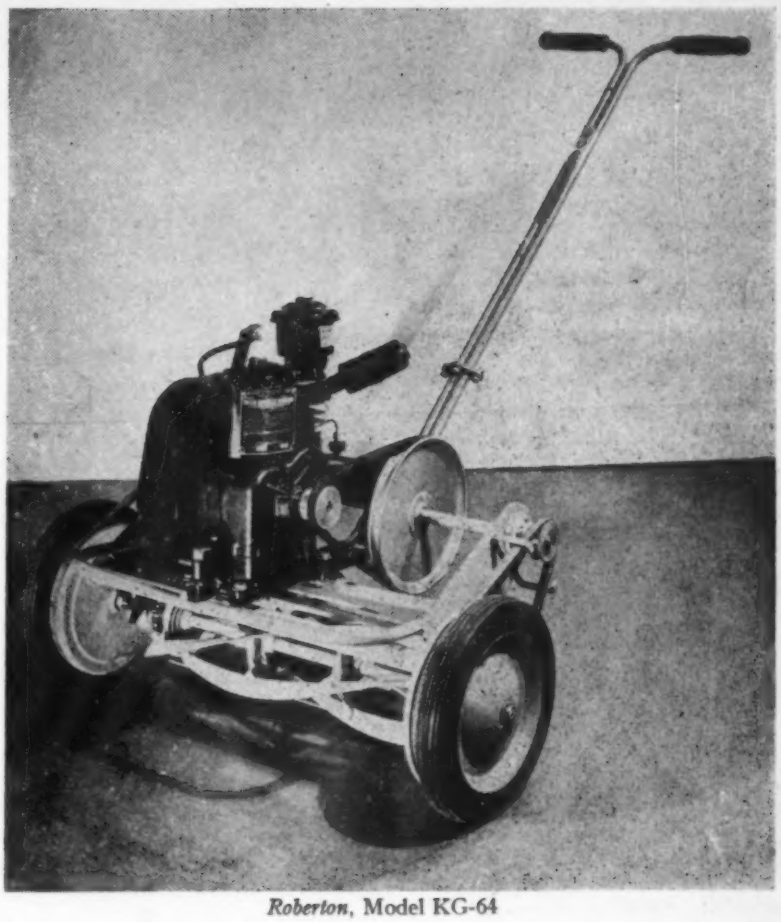


A. Recommended

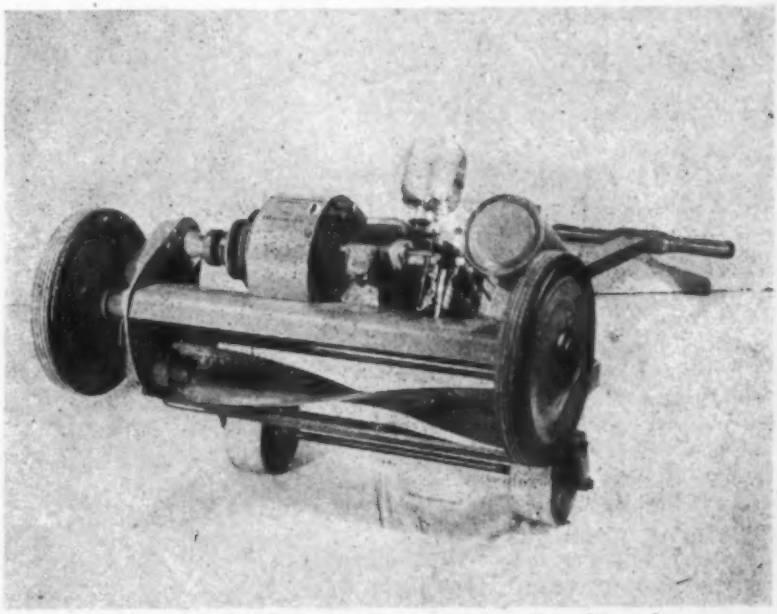
Eclipse Rocket (The Eclipse Lawn Mower Co., Prophetstown, Ill.) $125. Mower: width of cut 20 in.; range of height of cut adjustment from 15/16 in. to 1½ in.; cutting reel consisted of 5 blades and 5 cast-iron spiders; number of cuts per foot of travel, 12.8 (satisfactory and exceeds Federal specification requirement of 10 cuts per foot). Equipped with bracket for power sharpener unit available at an extra cost of $3. Easily met Federal specifications requirements for hardness of blades and bed knife. Weight, 121 lb. Engine: *Briggs & Stratton* 0.7 to 0.85 hp., 4-cycle; bearings, sleeve type lubricated by splash system; carburetor, non-float type (Federal specifications require float type); clutch, expanding ring type; equipped with lever cranking device, which is convenient and satisfactory when engine starts easily but judged not as good as rope pull when engine is hard to start (as may often occur in practical operation). Cutting speed controlled by hand throttle. Materials and design judged excellent. **2**

Homelawn (Toro Mfg. Corp., Minneapolis) $122.50. Mower: width of cut 20⅞ in.; height of cut adjustable from ¾ in. to 1⅝ in.; cutting reel consisted of 5 blades and 5 steel spiders; number of cuts per foot of travel 11.4. Lacked hooks for attaching grass catcher. Weight, 106 lb. Easily met Federal specifications for hardness of blades and bed knife. Engine: *Briggs & Stratton* 0.7 to 0.85 hp., 4-cycle; bearings, sleeve type lubricated by splash system; carburetor of the non-float type; clutch in the form of a slipping belt; rope pull starter; cutting speed controlled by hand throttle. Materials and design judged satisfactory. **2**

Pincor P-20 (Pioneer Gen-E-Motor Corp., Chicago) $150. Mower: width of cut 19¾ in.; height of cut adjustable from ½ in. to 2½ in. (very satisfactory range); cutting reel consisted of 5 knives and 6 steel spiders. Reel and bed knife were assembled as a unit which could be replaced in the event of serious damage. Built-in reversing gear provided for power sharpening. Number of cuts per foot of travel, 10 (satisfactory). Weight, 113 lb. En-



Roberton, Model KG-64



Cyclo-mower, showing unusual construction of cutting reel.

gine: *Pincor* 1½ hp., 4-cycle; bearings, sleeve type; lubricated by splash system; carburetor, float type; clutch of enclosed disk type; cranking by means of rope; cutting speed controlled by hand throttle. This mower came closer to meeting all of the requirements of Federal specifications than any other mower tested; its only important deficiency was in the hardness of the bed knife, which was somewhat too low. The *Pincor* was the only mower in the group tested that was provided with a shear pin to prevent damage in the event reel should be jammed by a twig, wire, or other foreign object. Materials and design judged excellent. 3

B. Intermediate

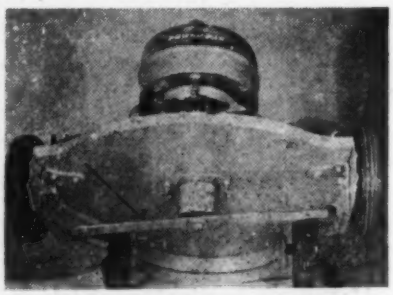
Lawn Queen (Jacobsen Mfg. Co., Racine, Wis.) $139. Mower: width of cut 19½ in.; height of cut adjustable from ⅝ in. to 1⅞ in.; cutting reel consisted of 5 blades, 4 cast-iron spiders; cuts per foot of travel, 9 (somewhat too few). Weight, 119 lb. Failed to meet Federal specifications for blade hardness by a small margin. Engine: *Jacobsen* 1¾ hp., 2-cycle, ball bearing; lubricated by mixing oil with the fuel supply; clutch, open-disk type; built-in wire-rope pull starter (desirable); cutting speed controlled by hand throttle. Considerable exhaust smoke, which would often be objectionable to users. Materials and design judged excellent. 3

C. Not Recommended

Roberton, Model KG-64 (King Pneumatic Tool Co., Chicago) $99.50. Mower: width of cut 19 in.; height of cut adjustable from ½ in. to 1½ in.; cutting reel consisted of 5 blades and 4 cast-iron spiders, secured by only 1 rivet per blade (undesirable); number of cuts per foot of travel 8.3 (too few). Mower blades ran continuously; undesirable, particularly where necessary to cross rough or stony surfaces such as drives. Failed to meet Federal specifications on several counts, including lack of differential action of wheels, reel construction, etc.; rear roller brackets of weak construction, easily broken. Weight, 91 lb. Engine: *Briggs & Stratton* 0.7 to 0.85 hp., 4-cycle; bearings, sleeve type lubricated by splash system; carburetor, non-float type; no clutch (depressing handle of mower tightens belts to propel the mower—not considered convenient); cutting speed controlled by manual governor adjustment of engine (inconvenient). Materials and design average. Might warrant a *B* rating for mowing a small yard. 1

Cyclo-mower (Doyle Mfg. Corp., Syracuse) $154.50. Not self-propelled. Mower: width of cut 19¾ in.; height of cut adjustable to 3 positions—1, 1½, and 2 in. Reel differed considerably from other mowers tested in that it was of small diameter and consisted of a 2-bladed solid spirally forged cutter which revolved at unusually high speed (2200 rpm.); bed plate was also a massive forged piece with 2 edges (1 in reserve). When pushed, at 2 m.p.h., gave 25 cuts per foot of travel (very advantageous). Lacked hooks for attaching grass catcher. Weight, 75 lb. Hardness of bed knife considerably below, and of blades, slightly below that required by Federal specifications. Disk wheels of light construction, easily bent out of shape. Conventional rear roller was replaced by two wheels; effect of these was to make it difficult to change mower direction in a short distance. Reel ran continuously (undesirable). Engine: *Doyle* 1 hp., 2-cycle; bearings, sleeve type lubricated by mixing oil with fuel supply; clutch in the form of a pin and plate which must be operated by hand with motor stopped. (Use of clutch required only in connection with power take-off pulley for a hedge trimmer, available at extra cost.) Engine had only two speeds, controlled at engine (an undesirable location for control). Air filter was simple screen, not likely to be very effective. Considerable exhaust smoke. Materials and design judged about average. 3

Rotary Flat-Knife Type (Disk or Arms Rotating in a Horizontal Plane)



C. Not Recommended

"Mow-Master" (Propulsion Engine Corp., Kansas City, Kans.) $149.50. Not self-propelled. Mower: consisted of flat solid knife 1¾ in. wide, 7/64 in. thick, which rotated in a horizontal plane (vertical shaft); width of cut 19¾ in.; height of cut variable from 1½ in. to 3⅛ in. in 3 steps by an inconvenient means. Platform supporting mower blade and engine was made of wood (less desirable than metal). Hardness of blade considerably below that required by Federal specifications. Weight, 54 lb. Front of mower open and rotating blade unguarded; whole arrangement deemed extremely hazardous since this type of mower calls for extremely careful and well-engineered guarding in order to be safe at all. Mower was difficult to manipulate. Engine: *Power Pak* 2 hp., 2-cycle with needle type crank pin bearings lubricated by mixing oil with fuel supply; lacked clutch (cutter blade operated continuously); rope pull start; engine speed controlled by hand throttle but stopping of engine required closing gasoline supply valve at engine; air cleaner, dry-disk type. Considerable exhaust smoke. Materials and design judged much below average. 3

Maid Is Strangled To Death As Scarf Catches In Wringer

KANSAS CITY, Kas., Feb. 18 (AP)—A maid's scarf caught in a washing machine wringer yesterday strangling her to death despite the frantic efforts of an invalid in a nearby room to summon aid.

The maid, Mrs. Florida Sanders, 53, was washing in the basement when a scarf around her neck caught in the wringer. Mrs. Nellie Freeman, 66, heard her scream. Although unable to walk, Mrs. Freeman pulled herself from her bed and tried for two hours to summon aid by shouting and rapping on a window.

Mrs. Sanders was dead when help finally arrived.

As the May 1946 Bulletin indicated (briefly discussed again in the March 1947 Bulletin), the risk to the user from a washing machine wringer is always a real one. No one can tell just how the accident may happen or just how serious the injury may be, but grave and even fatal accidents have been of frequent occurrence.

Golf Balls

THE little white spheres that are capable of taking such unreasonable directions and positions on and off the fairway are gradually coming back to the dealer's shelves, and it was possible to procure eight brands for test purposes. These were checked for those characteristics which determine putting accuracy, driving qualities (liveliness), and durability.

Putting accuracy is affected by variation in the distance through which a ball will roll on a given impact and on a given surface, and the variation in the direction of the roll. *Driving quality* of a ball is determined by the speed and completeness of the recovery of its material from the temporary deformation caused by the sudden impact of the club against the ball. *Durability* was judged by the results of impact tests to determine toughness of the cover. Compressive-set tests, which showed whether or not balls retained a permanent lopsided set after distortion, were also performed, as this characteristic affects both driving and putting qualities. In addition, the balls were measured and weighed to check their conformance to established standards; finally they were dissected to reveal their construction.

There was very little difference in the physical makeup of the balls; cores were all one inch in diameter and were either solid, or hollow and contained liquid, paste, or resinous filler; winding threads were all much alike except in the *Kroydon;* cover thickness varied very little, though the *U.S. Royal* Blue ball had a very thin (but fairly tough) cover. All of the balls tested retailed at the same price—3 for $2.85.

Diameter measurements and weight of all balls tested met the recognized standards of the U.S.G.A. (with the exception of the *Kro-Flite* which was overweight by a very slight amount).

Ratings are cr47.

A. Recommended

Air Flite (A. G. Spalding) Liquid-filled core. Was one of three best balls tested as to driving qualities. Putting properties, fair. Compressive set less than average (favorable). Durability of cover judged fair.

Kro-Flite (A. G. Spalding) Liquid-filled core. One of three best balls tested as to driving qualities. Putting properties, very good. About average compressive set. Durability of cover judged good.

B. Intermediate

Wilson K-28 (Wilson Sporting Goods Co.) Solid rubber core. One of three best balls tested as to driving qualities. Putting properties, poor. Compressive set considerably less than average, but direction of roll was not uniform. Durability of cover judged good.

U. S. Royal Blue (United States Rubber Co.) Liquid-filled core. Driving qualities, good. Compressive set was least of balls tested (very favorable). Putting properties about average. Cover thin, but durability was rated fair.

U. S. Royal Red (United States Rubber Co.) Solid rubber core. Driving qualities, fair. Compressive set above average (undesirable). Putting properties, good. Cover durability, excellent.

C. Not Recommended

Dunlop Gold Cup Championship (Dunlop Rubber Co.) Core filled with aqueous white paste. Driving qualities, fair. Compressive set about average. Putting properties about average; ball had especially long roll but direction of roll was not uniform. Cover durability judged good.

Kroydon Hy-Test (Kroydon Golf Co., Maplewood, N.J.) Clear resinous filler in core. Driving qualities were poor; ball had a peculiar sound when bounced and acted "dead" on rebound. Compressive set above average (unfavorable). Putting properties, about average. Cover durability judged good.

Super-Scot (Golf Ball, Inc., Chicago) Liquid-filled core. Driving qualities, fair. Compressive set highest of balls tested (unfavorable). Putting qualities, very good. Durability of cover judged poor.

Impact test machine being used to determine durability of golf ball's cover.

Soft Water for the Home

By C. A. TYLER, PH. D.

Water-Softening Equipment

MODERATELY hard or very hard water is all that is available in the homes of about three-quarters of the residents of the United States. As these people know from experience, hard water presents a number of difficulties. Perhaps the most annoying is the personal aspect, including the unpleasantness of trying to bathe, shave, or wash one's hair in water that is quite hard. In addition, the burden of household duties is greatly increased, for hard water makes dishwashing and laundering much more irksome than when soft water is used.

When ordinary soap is dissolved in even moderately hard water, much of the soap is used up in softening the water. For example, water containing 10 grains of hardness per gallon, or 170 parts per million, which is only "moderately hard," uses up as much soap to soften the water as is left over to do the cleaning. This means that water containing a mild degree of hardness wastes half the soap used, while water harder than this wastes an increasing amount of soap in proportion to increase in hardness.

While this represents waste of soap and an undesirable economic loss, this is probably a less serious consideration than the effort required and the annoyance caused in doing a cleansing job under such circumstances, when not only the ordinary soil but the hard-water curd formed by the soap has to be removed. Part of the difficulty is that when an article is cleansed in soapsuds and then rinsed in hard water, the rinsing operation changes the soap which is on the dishes or in the clothing into a gummy film which can be removed only by rubbing, and then not completely.

For this reason commercial laundries always use soft water, usually softened by special equipment adapted to their particular needs. Only by this means can they avoid the gray blotchy appearance and the stiffness resulting from hard-water rinsing, the former being particularly noticeable on white work. Clothes washed with softened water are much easier to get clean, and some of the rubbing which helps to wear clothes out is eliminated when soft water is used.

Another difficulty encountered in use of hard water is the crust or scale which forms in the water lines, particularly in hot-water boilers and hot-water pipes. Some of the salts which cause the hardness change on heating to less soluble compounds which are deposited as a layer of scale, the same kind of scale that builds up on the inside of a teakettle. This reduces the efficiency of the heating system, and in time may reach a danger point when the boiler or pipe may burst and give rise to considerable costs in making replacement of tank and piping.

To meet this situation water-softening equipment has been designed for domestic installation. It is comparatively expensive and is not justified where the water contains only a low degree of hardness. For water that is only slightly hard, various chemical softening agents such as have been discussed from time to time in CONSUMER'S RESEARCH BULLETINS[1], can be added to the dishwater or wash water. Chemical water softeners, when added to hard water, react with the salts in it in a way to prevent formation of slimy or curdy substances with soap. These substances, when not removed, do harm by being deposited in fabrics and give them an unpleasant feel and uneven or gray, soiled appearance. In general, sufficient softener should be used so that when soap is added, prompt and easy lathering or sudsing will take place. Use of an excessive amount of softener should be avoided. Adding substances that soften water chemically is simple, inexpensive, and reasonably satisfactory where the water hardness is low.

It is probably uneconomic to install water-softening equipment in a home unless the water has a hardness of 7 grains per gallon (120 ppm.) or more. In areas where the water is as hard as this or harder, it is probable that water softeners in the home will increasingly become standard equipment; in fact such a prediction has been made in a Government publication dealing with federal housing. If a softening system is installed, at least one tap (a cold-water tap) should deliver water which has not been treated; water which has been softened should not be used for cooking or drinking.

[1]Consumers' Research Bulletins, May 1944, p. 13-16; March 1946, p. 30-33; and '46-'47 Annual Cumulative Bulletin, col. 129-131.

Soft water is usually defined as that containing up to 6 grains of dissolved calcium and magnesium salts per gallon, or up to about 100 ppm. No fixed limit actually exists, as the definition may be expected to vary with the location, and what people are used to. In most parts of New York City, which has a soft water supply, anything over 3.5 grains would probably be considered hard. In Flatbush, Brooklyn, on the other hand, which has an exceptionally hard water supply, water of 6 grains hardness would no doubt be considered soft. In general terms, soft water may be considered to contain up to 5 to 6 grains of calcium and magnesium salts per gallon, and moderately hard water might cover the range of 6 to 18 grains or 100 to 300 ppm. Very hard water contains more than 18 grains or over 300 ppm. of hardness.

The Water-Softening Agent—Zeolite

Every source of hard water presents an individual problem, since no two natural waters are alike in the dissolved minerals which they contain. Analysis of local water can be obtained from any city water department. In rural districts or where no regular city supply is used, the manufacturer of softening equipment will furnish an analysis free to anyone sending in a sample from his local water supply. Consumers' Research, however, has enough information to indicate that the results furnished by commercial organizations who sell water-softening equipment may not always be reliable.

It would be well worth while, if the installation is of any considerable magnitude, to have the hardness determination of a softener manufacturing company checked by a local college laboratory or by an independent chemist analyst. The water analysis used to determine what water-softening capacity is needed should be a reliable one.

The agent used for softening the water consists of granular solid material called zeolite. This may be natural or synthetic. In both cases it consists essentially of complex compounds containing sodium, aluminum, and silica. When hard water flows through a column of zeolite granules, the sodium in the zeolite is exchanged for the calcium and magnesium that caused the hardness in the water.

Sodium zeolite + calcium salts → calcium zeolite + sodium salts

Sodium zeolite + magnesium salts → magnesium zeolite + sodium salts

By this chemical reaction the calcium and magnesium become a part of the insoluble zeolite material, while the sodium originally present in the zeolite forms soluble, unobjectionable sodium salts in the water.

Natural zeolite mineral, called "greensand," has to be processed before use and varies in its water-softening capacity from about 2500 to 5000 grains per cubic foot. In other words, a cubic foot of natural zeolite will remove a total of 2500 to 5000 grains of hardness before it becomes inactive so that no further reaction will occur. If the water contained 10 grains per gallon, this would mean that a cubic foot of greensand would soften 250 to 500 gallons of water. Synthetic zeolites have a higher softening ability than the natural mineral; their capacity ranges from 6000 grains to 12,000 grains per cubic foot.

Natural zeolite or greensand is more rugged than the synthetic material. It is used for softening water low in hardness, especially where the water has a low pH value or tends to be slightly acid. Synthetic zeolite is used for harder water, and makes possible the use of a smaller container because of its greater efficiency.

Regeneration of Zeolite

When the reaction mentioned above is complete or nearly complete, it is not necessary to discard the zeolite, since the reaction can be reversed. This is done by supplying an excess of sodium in the form of rock salt, an inexpensive material. The rock salt is dissolved in water to give a strong brine solution. The water inlet to the softening unit is turned off, the brine solution is led into the unit and trickles down through the column of zeolite. The first reaction is reversed and the zeolite is regenerated by formation of sodium zeolite by reaction with the sodium chloride in the brine. Soluble calcium and magnesium chlorides are taken up in the brine; the chlorides are much more soluble than the calcium and magnesium salts—chiefly sulfates, bicarbonates, and carbonates—originally present in hard water. This brine wash solution is drawn off into a waste pipe.

Description of Softening Unit

It can be seen from the above that the kind and amount of zeolite to be used in a particular unit will depend on the hardness of the water supply. It will also depend on the rate at which water is used, since a given amount of zeolite requires a certain time to react with the hardness in the water; that is,

the amount of zeolite and the rate of water flow have to be properly related to each other.

With the hardness of the water supply known, as well as the maximum rate at which water is drawn off, the manufacturer can calculate the capacity of zeolite unit required and the time interval between regenerations with brine, also the amount of salt necessary for regeneration. Such recommendations with detailed instructions are an essential part of the service supplied with the equipment. While the amount of water used per home must vary greatly, a limited survey indicates an average usage around 180 gallons of water for a family of four, per day.

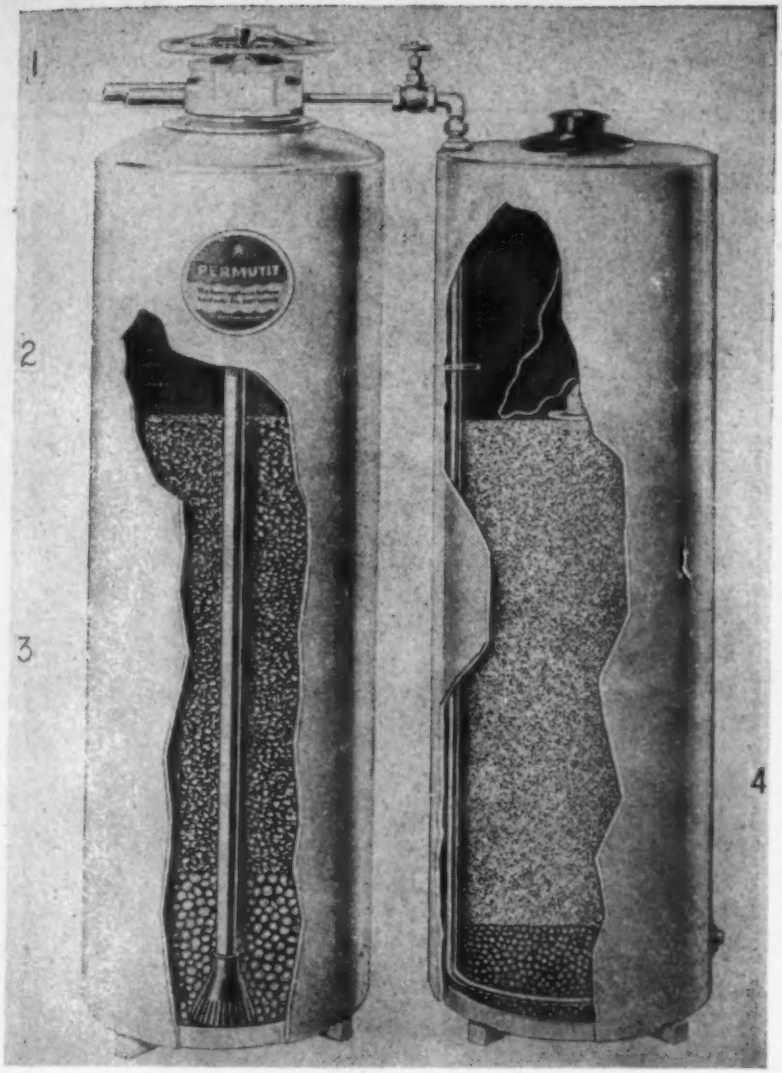
The zeolite container is an upright cylindrical tank much the shape of a hot-water boiler, usually of galvanized steel, sometimes with white enamel finish. At the bottom of the tank is a metal strainer on which is built up a supporting bed of gravel—usually of three grades, one above the other—on which rests the zeolite. Fittings and pipes are ordinarily of copper or brass, to avoid corrosion.

Exterior View of Permutit Water Softening Unit

Most of the units have as an integral part of the equipment a brine tank with piping leading to the top of the softening tank, and a suitable valve or valves for cutting off the general water supply, leading in brine, etc. The valve design varies with the maker and is one of the important factors in the cost of the equipment. Sometimes several valves are combined in one with a lever which is moved to different positions for different operations. The more elaborate valves provide "automatic" regeneration, merely by setting the valve. With some installations, the water supply is entirely cut off during regeneration; with others it is by-passed temporarily but not cut off.

The simplest kind of softening unit eliminates the brine tank. A removable cover at the top of the softening unit permits placing the rock salt on a screen inside the tank and above the zeolite bed, when regeneration is necessary. This is not as efficient as use of a brine tank, which itself is ordinarily equipped with a gravel filter at the bottom of the tank to remove dirt in the rock salt.

This brings up the point that the original water to be softened should be clear, since turbidity, color, or suspended solids will be taken up by the zeolite to some extent so that contamination of the surface layer of the granules prevents free chemical reaction. This is not a problem with city water, which is always purified to remove bacteria, algae, and suspended matter at the water-treatment plant. Where a private water supply is used, and the water is turbid, it should preferably be filtered through a suitable unit before going to a zeolite softener. Some designs of soft



A Permutit Water Softening Unit

Hard water flows through one of the pipes at (1) and into unit (2) through a bed of zeolite (3). Softened water then flows out the other pipe at (1). After a large amount of water has been softened, the absorbed hardness must be removed from the zeolite. This is called regeneration, *and is done by brine from the other tank (4) which contains salt, resting on a bed of gravel at the bottom.*

eners provide for "up-flow" rather than the more usual and less expensive "down-flow." This method filters the hard water through the gravel bed before it reaches the zeolite column, so that the water should be clear when it reaches the zeolite. As noted above, this should be unnecessary with any municipal water supply or with any clear well or spring water. Zeolite used only with clear water and properly regenerated will last for years and maintain its water-softening capacity.

When to Regenerate

When a unit is installed, the manufacturer's representative will advise the home owner as to how often it will be necessary to regenerate the zeolite bed with brine. This he can calculate on the basis of the figures furnished him for that particular installation as to degree of hardness in the water, and average and maximum rate of water flow. The larger the installation in terms of these factors, the longer the period between regenerations. For example, it might be two weeks with one unit, or one week with a smaller unit under the same circumstances. Use of a home unit requiring regeneration more frequently than once a week is not desirable, not only because of the nuisance involved, but also because the cost of salt would mount up to a somewhat uneconomic figure.

As an example, suppose the average water consumption in a single-family house is 180 gallons per day and the hardness in the water is 10 grains per gallon. If the total capacity of the softening unit between regenerations is 30,000 grains of hardness, then regeneration will have to be carried out every 16 days. (Actually this period should be shortened a little to allow a margin of safety.) If a softening unit having a total capacity of 20,000 grains of hardness is installed in the same home, regeneration would be necessary every 11 days $\left[\frac{20{,}000}{180 \times 10}\right]$. For this moderate degree of hardness and no extreme water consumption the smaller unit should be satisfactory. A water meter reading in cubic feet can be converted to gallons by multiplying by 7.5.

Manufacturers of water-softening equipment usually supply a small kit consisting of container for the water sample, standard soap solution, and medicine dropper, with directions for use. A certain number of drops of the soap solution is put into a measured amount of water. When the solution produces a foam or

Manufacturer or Distributor	Capacity Between Regenerations, grains	Type	Flow Rate, gal. per min.	Salt Needed per Regeneration, lb.	Price of Equipment*
Duro Pump Co., Dayton 1, Ohio	23,000	Semi-automatic, up flow	12.00	—	$225.00
	32,000	" " " "	12.00	—	250.00
	20,000	Down flow, without br. tnk.	4.00	—	86.50
	30,000	" " " " "	6.00	—	102.50
	22,000	" " " " "	8.00	—	83.50
	20,000	Down flow	4.00	—	127.00
	30,000	" "	6.00	—	149.00
	22,000	" "	8.00	—	131.00
	45,000	" "	8.00	—	199.00
	31,000	" "	8.00	—	155.00
	60,000	" "	10.00	—	265.00
	44,000	" "	10.00	—	220.00
	56,000	" "	12.00	—	280.00
Elgin Softener Corp., Elgin, Ill.	20,000	Internal Salting	5.00	—	98.00
	30,000	" "	5.00	—	118.00
	45,000	" "	7.00	—	138.50
	60,000	" "	10.00	—	167.00
	30,000	Semi-automatic	5.00	—	145.00
	45,000	" "	7.00	—	170.00
	60,000	" "	10.00	—	205.00
HomEase Products Division, Bogue Electric Co., Paterson 3, N. J.	22,000	Semi-automatic or automatic	5.00	15	129.50
	30,000	" " " "	7.00	20	147.50
	48,000	" " " "	10.00	32	177.50
	22,000	Direct salting	5.00	15	89.50
	32,000	" "	7.00	20	109.50
	42,000	" "	10.00	28	129.50
Hungerford & Terry, Clayton, N. J.	28,000	Semi-automatic	6.00	16	159.50
Montgomery Ward & Co., Chicago	20,000	Up flow, without br. tnk.	4.17	14	59.25
	30,000	" " " " "	5.41	21	71.50
	40,000	" " " " "	6.66	28	82.50
	60,000	" " " " "	10.83	42	103.50
	30,000	Up flow	5.41	21	87.50
	40,000	" "	6.66	28	99.50
	60,000	" "	10.83	42	124.50
	40,000	Down flow	5.00	28	114.50
	60,000	" "	6.66	42	146.50
Permutit Co., 330 W. 42, New York 18	21,000	Single valve	5.25	14	—
	38,000	" "	10.00	25	—
	21,000	Semi-automatic	5.25	14	—
	38,000	" "	10.00	25	—
	20,000	Single valve	6.25	14	—
	30,000	" "	9.75	20	—
Refinite Corp., Omaha, Nebraska	30,000	Down flow, solo valve	6.50	20	189.00
	40,000	" " " "	8.50	26	242.55
	20,000	" " " "	5.00	15	198.45
	40,000	" " " "	8.50	28	252.00
	20,000	Multiport valve	5.00	13	135.45
	30,000	" "	6.50	20	152.78
	40,000	" "	8.50	26	176.40
	50,000	" "	8.50	32	201.60
	20,000	" "	5.00	15	158.55
	40,000	" "	8.50	28	207.90
	20,000	Up flow, without br. tnk.	5.00	—	89.25
Sears, Roebuck & Co., Chicago	20,000	Without brine tank	3.90	14	49.95
	40,000	" " "	5.35	28	72.00
	60,000	" " "	7.00	42	92.00
	20,000	Up-flow, multiple valve	3.90	14	67.50
	40,000	" " " "	5.35	28	94.50
	60,000	" " " "	7.00	42	112.50
Universal Water Softener Co., 1005 S. Fifth, Maywood, Ill.	20,000	Without brine tank	—	10	63.00
	20,000	Multiple valves	—	10	90.00
	30,000	Without brine tank	—	15	97.50
	30,000	Multiple valves	—	15	125.00
	50,000	Without brine tank	—	25	130.00
	50,000	Multiple valves	—	25	155.00

*This is exclusive of freight charges and of installation. Additional information about type and details as to finish, floor space required, etc., will of course be obtained from the manufacturers.

lather when shaken, the water is soft; when it does not, it is hard.

A simple test to determine whether water is still hard is to dissolve a small portion of pure soap such as *Ivory* flakes in water. A half teaspoonful of soap flakes in a quart of water should produce suds on stirring, with little or no cloudiness in the soap solution if the water is soft. If the soap is used up in softening the water, the latter becomes turbid or cloudy and suds fail to form.

In the accompanying table, although an attempt has been made to show costs in terms of softening capacity, it is difficult to compare the cost price of the equipment of one manufacturer with that of another, because of differences in construction, particularly of valves, which it is not possible to show in the table. All units have a brine tank except those specifically marked "without brine tank"; the latter are single-tank units with direct salt regeneration.

The units which will accomodate the low flow rate of 5 gallons of water per minute, are suitable for small families. The minimum total grain capacity of 20,000 grains between regenerations is suitable for moderately hard water only and would be impractical for water in the higher brackets of hardness.

Water-softening equipment must, of course, be purchased to meet the requirements of the place where it is to be used. No recommendations can be made that will apply to all home conditions. Consumers may, however, be guided by this discussion as to the points that need to be kept in mind and as to inquiries to be made of manufacturers and dealers to bring out the information that is required, to permit of an intelligent and economical choice.

Facts and Fads in Garden Soil Management—II

By WARREN B. MACK, PH.D., THE PENNSYLVANIA STATE COLLEGE

Composts vs. Commercial Fertilizers

All of the plant nutrients returned in composts of animal manures have been derived from the land, while those applied in commercial fertilizers are *added* to the soil, to replace the nutrients removed in cash crops sold from farms, for uses in which no return is made to the land. Commercial fertilizers, moreover, are not used uniformly on farms throughout the country, but are in greatest demand in those regions or on those types of farms where the removal of plant nutrients in cash crops sold from farms is greatest, as in fruit, vegetable, and cotton crops.

Use of manures is confined almost entirely to farms on which livestock is kept; use of commercial fertilizers is much greater on farms from which crops of the highest value to the acre are sold, and from which, therefore, the removal of plant nutrients from the farm is greatest. Fertilizer use is greatest also in those regions where crop production began earliest in this country, which include the coastal plains and the northeastern states, from North Carolina and Tennessee to New England—the regions in which depletion of soils through crop removal as well as through erosion has been most extensive.

The amount of plant nutrients removed from the soil is greater than that returned in manures and fertilizers, even in regions where the greatest quantities are returned.

Organic Matter and Humus

The production and removal of crops and the operations concerned therewith deplete not only the nutrient supply in the soil but also the organic content. Organic matter, let it be remembered, is not required to grow plants, which will thrive perfectly well in aerated solutions of inorganic compounds; it is essential, however, to the proper functioning of soils in their relations to growing crops. It aids in granulating the soil, improving aeration and the soaking in and percolation of rainfall, as well as increasing the moisture-holding properties of the soil. Of plant origin, it contains substances in the proportions needed for plant growth, and holds these in forms which resist removal by water alone, but which are readily broken down by soil organisms and thereby released for the use of plants (or loss in drainage waters if no plants are present).

Under natural conditions, organic matter is present on and in the soil in all stages from the living plant or animal, through all stages of decomposition, to the residual portion most resistant to decay, known as humus. Most of the soil-improving properties of organic matter are associated with the humus; if other conditions are similar, soils with high humus content are the most productive.

Because tillage operations accelerate the decomposition of organic matter, including humus, it is necessary to return greater quantities of organic matter, the more the soils are worked. Market gardeners who grew two or more tilled crops a year, in the days when horses were the chief source of horsepower for traction and transportation, were accustomed to apply 40 or 50 tons of manure compost to the acre annually, and applications of 70 to 100 tons

were not unheard of. Soils thus treated could be cropped continually without loss of productiveness, and their humus content was maintained high.

In the absence of this supply of organic matter and plant nutrients, it has become necessary to crop less intensively, to grow organic matter on the land itself, and to supply plant nutrients from inorganic sources. Sufficient experience is at hand, both from experiments and practical farms, to show that productiveness can be maintained in this way.

Green Manuring

The growing of organic matter on the land is known as green manuring. In practice, crops are grown which are well suited to the soil, climate, and season in which it is most economical to grow the green manure. Preference is given to legumes—clovers, alfalfa, beans, peas, vetches, lespedeza, and other members of this family of plants—because they shelter in nodules on their roots certain bacteria capable of synthesizing nitrates from the nitrogen of the air, but other crops are chosen if the quantity of organic matter they produce is sufficiently greater to be an advantage. These crops are plowed or disked into the soil, usually at the stage when their total organic matter is sufficiently great and before their nitrogenous content is too low in proportion to the total dry matter. If a cash crop is to follow the green manure in the same growing season, the green manure must be incorporated into the soil early enough to be well decomposed before the cash crop is seeded.

If the proportion of nitrogen to total dry matter is too low at the time the green manure is incorporated into the soil, as will be the case when the green manure crop has become too old and woody, the fungi and bacteria which act upon it, lacking nitrogen for their nutrition, will not be active and multiply, unless they can draw sufficient nitrogen from the soil supply. Decomposition will be retarded, and the soil nitrates will be reduced during the process, to be restored gradually as decomposition nears completion. Plants on a soil during the period of most active decomposition will be stunted because nitrogen has been made unavailable to them.

Because of their high cost in relation to the amount of organic matter supplied, commercial organic fertilizers cannot be regarded as an economical source of organic matter. Their chief value lies in the relatively long-continued availability of the nutrients they contain.

New Stewart-Warner "South Wind" Home Heater

IN the March CONSUMERS' RESEARCH BULLETIN, page 22, the new Stewart-Warner *South Wind* house heater was through error confused with this company's gasoline-burning heater which was extensively used for war planes; the house heater was incorrectly described as being of the jet type for burning oil.

The new *South Wind* actually burns manufactured, natural, or bottled gas. It is a very compact unit having cabinet dimensions of 11 in. x 14 in. x 32 in. in which all combustion takes place in a sealed (except for air inlets and outlet) stainless steel chamber. The arrangement is such that the units may be installed in the walls, under the floors, in closets, or in the attic.

The manufacturer has fully recognized consumer objections to excessive noise, which was the only adverse factor cited in the March article, and claims that the noise produced is just that due to the rush of air, no greater than that of an electric fan of the new quiet type.

An outstanding feature is the modulated control of the gas burner, which will give from 6000 to 25,000 Btu. per hour according to the demand at the thermostat. It should be noted that this maximum capacity is relatively small as compared with conventional heaters used in the basement, being equivalent to about 100 sq. ft. of steam or 170 sq. ft. of hot water radiation. Thus in any but a very small living space (2½ rooms) more than one unit would be required. Stewart-Warner recognize this, but hold that the installed cost would nevertheless be less than for conventional systems when not more than two units are required (about the same as conventional systems when three units are needed). The use of more than one unit gives the added advantage of zone control of temperatures according to needs of the particular group of rooms.

In place of conventional chimneys the units use a 2-inch vent tube which can be connected to the chimney by as much as 25 ft. of horizontal tubing or, if local regulations permit, exhausted direct to the outside through a small vent pipe.

2,4-D

CR carried a brief discussion of 2,4-D, a new potent weed-killing substance, in the BULLETIN for August 1946. (Products advertised nowadays as wonderful and magical weed killers are almost certain to be based on 2,4-D.) Since that time there have been many technical discussions of this material (first publicly announced only three years ago) in agricultural bulletins and elsewhere. A very useful treatment of the topic appears in Farm and Home Research Bimonthly Bulletin, No. 245, March-April 1947, of the Ohio State Agricultural Experiment Station, Wooster, Ohio.

Important points regarding the use of 2,4-D given in the Ohio bulletin are the following: There is great risk of injuring plants which one does not wish to affect; drifting spray can kill flowers, vegetables, and shrubs (particularly ornamentals) which happen not to be resistant to the material. (Do not try to treat weeds among shrubs.) There may even be an effect on the progeny of such plants, through damage to the seed, which could be a vital problem for persons raising vegetables and flowers for the market or for exhibition. It is considered safest on this account not to use 2,4-D on seed crops intended for planting.

If possible, use a separate sprayer for 2,4-D, as it is very difficult to clean it completely out of a sprayer. If one sprayer must be used for 2,4-D and other substances, wash the sprayer after use with 2,4-D with trisodium phosphate solution (⅔ oz. per gallon) or household ammonia solution (1 part to 100 of water), allowing the solution to stand in the sprayer 36 to 48 hours; then rinse thoroughly. It will be best when practicable to start such treatments with hot water.

A great advantage of 2,4-D is the small amount required, compared with other weed killers. (Standard solution: 1 part per thousand of 2,4-D acid[1] corresponding to about 1¼ lb. per acre or 4 gallons per 1000 square feet on lawns, up to 2½ pounds per acre on a heavy growth of weeds; use double the standard concentration and amount prescribed on poison ivy and other resistant woody growth.) Ammonium sulphamate (also sold as *Ammate*) is the most effective chemical on poison ivy, but kills almost everything else besides and is much more expensive than 2,4-D.

Usually, young, immature plants are most easily killed, but remember the action is slow, taking up to a month or more. The effect is greatest on plants in moist and wet soils, and in sun rather than in shade. Lawns are best treated in the fall so as not to open up the lawn to growth of crab grass. Thistles are highly resistant, and may require several treatments.

[1]As distinguished from the esters and salts of the acid, which are also used for weed killing.

Jewel-Tipped Phonograph Needles

JEWEL-TIPPED phonograph needles, as Consumers' Research has stated before, as a group cause more severe record wear in tests than either "precious metal" needles or steel or chromium needles. To many consumers, however, this is not nearly so important as not having to change needles so often or getting the best reproduction from a new or nearly new record with a minimum of surface noise.

Sapphire-, ruby-, and diamond-tipped needles are now being sold, and at very high prices ranging from $1 to $2.50, $5, even $50 (for a diamond needle). Consumers are often led into paying the higher prices on the assumption, encouraged by dealers and salesmen, that use of a "permanent" needle makes the cost per play actually less than or about the same as that for metal needles. While this might be true if the needles were really "permanent" or at least very long-lived, it is not true in fact. Jewel-point needles do wear out and need replacing, rather frequently, if their user is very careful to avoid risk of needless wear of valuable records.

In CR's tests, a ruby-tipped needle, the *Duotone Ruby*, and a diamond tipped needle, the *Moser*, did not themselves show excessive wear of the point until they had given a great many

Summary of CR's Test of Jewel-Tipped Needles

(Tests at 1¾-oz. needle pressure, unless otherwise noted.)

Brand Name & Manufacturer	Price	No. of Plays Claimed	No. of Plays at which Needle Showed Excessive Wear	No. of Plays at which Record Showed Damage (Approx.)	Surface Noise Through Speaker	Needle Noise or Scratch[1]
SAPPHIRE-TIP						
Admiral Lifetime Precious Jewel (Admiral Corp., Chicago 47)	$2.50	—	250	250	Slight	Slight
Duotone "Star Sapphire" (Duotone Co.)	5.00	10,000	450	100	Slight	Slight
Walco "Tru Trac" (Electrovox Co., 424 Madison Ave., New York 17)	1.00	5,000	350	100	Slight	Slightly Noticeable
Capitol (Electrovox Co.)	2.50	10,000	325	100	Slight	Slight
Walco "Floating Jewel" (Electrovox Co.)	2.50	"Up to 10,000 in most 1941 and 1942 pick-ups of 1¼ oz. needle pressure."[2]	Showed Ragged Wear at 50	100	Slight	Slight
RUBY-TIP						
Duotone Ruby[3] (Duotone Co.)	3.50	5,000	1,000	300	—	Noticeable
DIAMOND-TIP						
Moser (Moser Jewel Co.)	12.00	—	1,000[4]	100	—	Slight

[1]This is the noise which issues directly from the needle tracking the record without passing through the audio amplifier circuit and the speaker.
[2]In a practical sense, this claim is misleading, since few but "professionals" would have a pickup having these particular characteristics.
[3]At 1-oz. needle pressure.
[4]Probable life, at heavy needle pressure-common to many widely used pickups (e.g., pre-war *Garrard* and some '46 *Astatics*).

more plays than the sapphire-tipped needles. Both needles, however, visibly wore records on which they were used, at 100 to 300 plays. It must be remembered that there is a considerable element of variation in tests such as these, and a different diamond or a different ruby might give a somewhat different number of plays at which significant wear would occur. However, the findings seem to indicate that the ruby caused less wear than the diamond.

The *Duotone Ruby*, tested recently, was tested in a pickup which had been adjusted to about 1-ounce needle pressure by means of an upward spring tension. The first evidence of slight record wear occurred at about 100 plays. At about 300 plays damage to the record was considered severe enough to interfere with satisfactory reproduction. This record was removed at 500 plays. A new record of the same selection (American Salute—Victor 11—8762) was then played. This record too was removed at about 500 plays. The needle, which had not shown wear on previous examinations, showed the beginnings of a flat surface at its tip at this time.

Tip of Duotone *ruby needle after about 1000 playings. Magnification 140X.*

The results of the test are summarized in the table; results of tests on other jewel-tipped needles are included also, for the reader's convenience.

Food Mixer

THE following food mixer, which was not available at the time tests were made on *the Sunbeam Mixmaster, Hamilton Beach, Kitchen Kit,* and *Dormeyer* (reported in the September 1946 BULLETIN), was subjected to the same tests and has been rated in comparison with those mixers.

B. Intermediate

KitchenAid, Model 3-B (Hobart Mfg. Co., Troy, Ohio) $49.50, including one 3-qt. glass bowl and juice extractor. Equipped with built-in mechanical power outlet for attachments requiring considerable power at low speeds. Speed control operated by convenient knob at rear of motor, marked 1, 2, 4, 6, 8, and 10. Metal plate on handle lists type of operation for which various speeds are best suited. Speed range of beater, 170 to 710 rpm. Bowl, which locks in base of mixer, remains stationary while single beater, which has a planetary action, travels around bowl in one direction, turning on its own axis in opposite direction. Beater and motor not removable for use as portable mixer. Power input at full rated load, 136 watts. Radio interference very slight. Relatively quiet in operation. Performance: In juicing oranges, satisfactory (time required for 6 oranges, 180 seconds, which was approximately the same amount of time as required on the average by the hand-operated juicers). Ranked fifth (slowest) in speed of mixing sponge cake batter (446 seconds); fastest mixer required 351 seconds. Texture of mix when baked, good. Ranked third in speed of mixing refrigerator-cookie batter (252 seconds). Leakage current excessive under all conditions with switch on. Food chopper (meat grinder) attachment, $9.85 extra, worked very well. Can opener attachment, $3.75, also was satisfactory, but the desirability of a power-driven can opener would be questionable for the average size home, where ordinarily only one or two cans are opened at a time. This mixer, which has only a single beater, does a very thorough job of mixing, and would warrant an *A* rating if the electrical leakage currents were not excessive. **3**

KitchenAid, Model 3-B

Off the Editor's Chest

[*Continued from page 2*]

served to maintain prices against competitive price activity. As observing consumers noted from time to time, the highest price permitted by the OPA for a particular commodity became in effect *the* price at which it was sold. As soon as governmentally-sanctioned price controls were done away with, the American Fair Trade Council, reported Business Week, was deluged with calls from manufacturers and businessmen for information on how to "protect their price structure," by means of "fair trade" contracts. This is one aspect of OPA's activity which businessmen knew quite well, and favored, though it was never featured in OPA officials' appeals for *consumer* support of their operations.

The fact that items on which manufacturers have fixed prices could not be included in recent store-wide markdowns in certain localities has been high lighted by the markdown advertising itself in some cases. Commissioner Lowell Mason of the Federal Trade Commission called attention to

the matter in a speech made several months ago in Chicago in which he cited the case of a Washington store that had announced price cuts on all merchandise except items on which prices were fixed by manufacturers. He criticized such manufacturers for failure to permit the lowering of prices of price-fixed products. One trade journal, in discussing the speech, pointed out that manufacturers in their own interest had best make it plain as soon as possible that "fair trade" was forced on them by small retailers, or the discontent with price-maintenance policies might become serious.

Resale price maintenance or "fair trade" is not the only technique in wide use for keeping prices high. For many years there have been cases where unions have been responsible for the same sort of action. One instance in recent months is that of a West Coast CIO fishermen's local which frankly set out to "stabilize" prices of fish by requiring dealers in certain California communities to sign price contracts or be picketed. An AF of L fishermen's union on the East Coast put on a selling strike to keep prices high. An AF of L lumber union and a West Coast organization of lumber concerns were found to have an agreement to fix prices and wages to keep out-of-state lumber manufacturers from shipping and selling their products within the area covered by the agreement. Attempts of unions and employers to limit the use of spray guns for painting on housing projects, and a myriad of other costly restrictions on other labor-saving devices in the building field have played a large part in pricing homes right out of the market for a great many people. A milk drivers' union in Chicago demanded a contract which would *increase* the percentage rate of their commission as the number of quarts sold became larger, with the idea of making milk sold in stores more expensive, and so encouraging the demand for home deliveries—with more jobs for wagon drivers. (The store milk-delivery drivers now *average* $143 a week; 52 receive $8400 to $13,000 a year.) And left-wing labor groups constantly press demands that milk, which they hold to be a vitally necessary food for low-income families, should be sold at *lower* prices!

The proponents of all of these devices for maintaining or increasing prices have ingenious arguments for their position; they invariably attempt to show how much better it is for the community to have "stabilized" conditions and avoid "cut-throat competition" which causes bankruptcy and unemployment. (*Any* kind of competition is, of course, "cut-throat" competition to the manufacturer, dealer, or labor leader who is trying to "stabilize" prices or wage rates.) Only *consumers* are supposed to take the statesmanlike point of view on matters affecting their pocketbooks and sacrifice themselves for what is held out to be the common good. There are some signs, however, that the man who is footing the bills is getting a little restive. Whether he will get sufficiently irritated at the price-fixers to speak out plainly to his local newspaper, his congressman and senators, and at meetings of the various organizations to which he belongs remains to be seen. One thing is certain: if consumers once understand the actual effect on their pocketbooks of these price-fixing practices conducted under governmental approval and with the aid of state and federal laws and regulations, they can and will secure a long-overdue change in policy on the part of both government and industry.

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†indicates that listings of names or brands are included.

Photo-Slide Projectors

THE outstanding characteristic common to all 2 in. x 2 in. slide projectors now on the market is the inordinately high price charged for a device requiring little machine work and cheaply made from sheet metal or castings. Even the best objective lenses used on projectors of the types tested are of moderate cost to manufacture, since they require correction for only a narrow angle; the satisfactory performance of the Petzval lens of the *Spencer* projector is proof that even anastigmatic correction is not necessary. (The condensing lenses are not even of optical glass, and are inexpensive to make). Prices of from about $40 to over $70 for the less undesirable projectors are relatively even higher than today's very high prices for cameras. There seems to be no reason why a 300-watt projector should sell at a price materially higher than that of a 100-watt model, since the only important differences are the bulb (about $2 at retail more for the 300-watt than for the 100-watt), the larger housing of the 300-watt model, and perhaps the addition of a small piece of heat-absorbing glass worth a few cents.

Projectors which will handle 2¼ in. x 3¼ in., or 2¼ in. x 2¼ in. and smaller slides are now appearing on the market. Such projectors, if satisfactory, will permit users of cameras which take No. 120 or B2 roll film to project slides made with *Ansco* Color roll film and at a cost somewhat less than for *Kodachrome*. (See Table I.)

The requirements of a good projector are:

1. The projected image must be sharp from edge to edge and from corner to corner.

2. Illumination must be visually even over the picture area, with no "hot spots" or dark areas.

3. The objective lens should be sufficiently well corrected for chromatic aberration that no color fringes appear in the image; the color-fringe defect is particularly objectionable with natural-color slides.

4. The condensing system should be reasonably efficient, in order to obtain the required intensity of illumination from a bulb of moderate power.

5. The focusing adjustment should be capable of fine focusing without difficulty, and should work so smoothly that the projector is not jarred. A rack-and-pinion or friction drive works best in this respect, with the threaded lens tube second, and the simple draw-tube a poor third.

6. There should be no tendency to overheat slides, with consequent buckling of films.

The illumination required depends upon the use to be made of the projector. For home projection on a screen of moderate size, an optically efficient projector with 150-watt bulb may be found adequate by many users, but for projection of color film, some of which may be underexposed, more light may be preferred; a properly-designed 150-watt projector would be adequate, but unfortunately the only one tested which made effective use of its available light was otherwise unsatisfactory. A 300-watt projector with efficient condensing system would give more light than would be required in home projection, but the most efficient 300-watt projector tested produced only about 25 percent more illumination than did the single efficient 150-watt projector. As a practical matter, therefore, one who wishes to get a projector which is reasonably satisfactory in other details, and which gives as much light as the user is entitled to expect from a 150-watt projector, must purchase a 300-watt model.

Table I

Relative Costs of Kodachrome and Ansco Color

	Kodachrome	*Ansco Color*	*Ansco Color*
	Bantam size at $1.65 for 8 exposure roll	2¼ in. x 2¼ in. at $1.10 per 12 exposure roll plus $1 for developing	1⅝ in. x 2¼ in. at $1.10 per 16 exposure roll plus $1 for developing
Film cost per exposure	20.6c	9.2c	6.9c
Developing	included	8.3c	6.25c
Total	20.6c	17.5c*	13.15c*

*Unmounted. *Kodachrome* film is returned in cardboard mounts ready for mounting between 2 in. x 2 in. glass while *Ansco* is returned in the strip. When glass becomes readily available for the 2¼ in. x 2¼ in. size, the difference in cost of mounting the two types and sizes of film between glass should be small. Another advantage of the *Ansco* Color film is that those who wish may develop it themselves.

In the tabulation below, Table II, the illumination provided by the *S.V.E.* 100-watt Model RK has been taken arbitrarily as unity, and that of the other projectors compared with it; the figures (reltive) for screen illumination of the several projectors per 100 watts are given in column 3, as a measure of the light-efficiency of the design.

In view of the well-recognized nonuniformity of photographic equipment of every sort, the performance of any projector which a consumer may buy may differ significantly from that of those tested; the variation even among bulbs of the same rated wattage may be several percent. The prospective purchaser therefore will often want to insist on the privilege of testing a projector before finally committing himself to its purchase.

CR considers that most consumers would do well to defer purchasing any projector at the present high prices. As buyer resistance is now being felt, one may expect that in the not too distant future better merchandise in this field will be available at lower prices.

Table II

	Lamp Wattage	*Illumination Provided at Screen (relative)*	*Illumination Per 100 watts (relative)*
Argus	100	0.63	0.63
S.V.E., Model RK	100	1.00	1.00
Spencer MK 150	150	0.88	0.59
Kodaslide 2A	150	1.38	0.92
Bausch & Lomb	150	1.50	1.00
Amproslide	300	1.50	0.50
S.V.E., Model AK	300	1.63	0.54
T. D. C.	300	1.88	0.63

The *Vokar* was not included in the measurements above because the illumination was so uneven that no area large enough to afford a proper reading was found.

A. Recommended

S.V.E., Model RK (Society for Visual Education, Inc., Chicago) $40.95 with anastigmat lens. 100 watts; f:3.5 Series O lens of 5-in. focal length. Triple condenser. Projector was small in size. "Through-switch" in cord. Slide carrier worked smoothly. Lever device for tilting very convenient in use. No danger to slide from overheating. The anastigmat lens had a pressed thread on the barrel for focusing by turning; the lens was the best of any tested for flatness of field and chromatic correction, and would be rated fully satisfactory. The *S.V.E.*, Model RK, was one of the two projectors tested which showed satisfactory efficiency of illumination. For a user whose needs will be served by the relatively limited illumination this projector provided, it should be entirely satisfactory. For listing of this projector with Petzval lens see under *C. Not Recommended.* **2**

B. Intermediate

Kodaslide, Model 2A (Eastman Kodak Co., Rochester, N.Y.) $47.50. 150 watts; f:3.5 coated lens of 5-in. focal length. Triple condenser and disk of heat-resistant glass; company's advertising states that all condenser surfaces are anti-reflection-coated, but the usual bluish tint was not in evidence. Switch on body. Tilting by means of convenient knurled knob. Slide carrier fairly satisfactory. Lens tube threaded for focusing. Lens quality not the best, as lens showed considerable curvature of field (not all parts of the image in focus). Body of machine overheated in operation, but slide would probably not be damaged during normal time of display. **2**

Spencer, Model MK 150 (Spencer Lens Co., Buffalo) $40. 150 watts; f:3.6 Petzval lens of 5-in. focal length. Double condenser and disk of heat-absorbing glass. Switch on cord. Tilting device used slotted strip and thumb nut, not fully satisfactory, as it occasionally slipped. Illumination less even than desirable, with "hot spot" in center of screen (this probably would not be noticed except with lowest-density slides). Focusing by push-pull (undesirable). The objective lens, although on the Petzval formula, was in a class with the anastigmat lenses on *Argus*, *Amproslide*, and *T.D.C.* projectors. **2**

Amproslide, Model 30 A (Ampro Corp., Chicago) $70.20. 300 watts; f:3.5 *Wollensak* coated anastigmat lens of 5-in. focal length. Double condenser, with disk of heat-absorbing glass between the lamp and first condenser lens. Switch on body. Tilting device, operated by knob, was smooth and convenient. Slide carrier of excellent design and convenient in use. Convenient and smooth focusing by friction drive. Exceptionally cool in operation. Lens satisfactory. Mechanically a good projector, but the efficiency of illumination was relatively very poor. **3**

Bausch & Lomb (Bausch & Lomb Optical Co., Rochester, N.Y.) $64.50. 150 watts; f:3.5 lens (presumably Petzval type) of 5-in. focal length. Triple condenser, the small lens (nearest lamp) of heat-resistant glass. Switch on body. Lever device for tilting, satisfactory and convenient. Slide carrier not firmly fixed, with result that it tipped and threw picture out of focus at top or bottom, requiring frequent adjustment; worked stiffly and was in general a clumsy affair. Condenser system efficient; heat resistant condenser lens broke from heat during the test. No trouble from overheating of slides. Objective lens suffered from curvature of field. This equipment is not as good as the pre-war model at $33.50; mechanical construction judged clumsy and inaccurate. It is unfortunate that a projector having superior efficiency of illumination, as this had, should be otherwise so unsatisfactory. **3**

S. V. E., Model AK (Society for Visual Education, Inc.) $62.90, with anastigmat lens. 300 watts. Lens equipment same as for *Model RK* of this make. Triple condenser and heat-absorbing glass. Tilting device as on *Model RK*. A semi-automatic slide changer (slide carrier), in which slides were inserted vertically, was exceptionally convenient in operation. Condenser system inefficient. Body of projector became uncomfortably hot in continued operation, but damage to slides unlikely for normal time of display. For listing of this projector with Petzval lens see under *C. Not Recommended*. 3

T.D.C., Model 300 (Three Dimension Co., Chicago) $70.20. 300 watts; f:3.5 coated anastigmat lens of 5-in. focal length, made by Simpson Optical Mfg. Co., Chicago. Double condenser with disk of heat-absorbing glass between condenser lenses. Same slide carrier as *Amproslide*. Except for the arrangement of the condenser lenses, the objective lens used, and minor external details which do not affect efficiency, this projector was very similar to the *Amproslide*. The arrangement of condensers gave this projector increased efficiency as compared with *Amproslide*, but it still produced too little light for a 300-watt projector. The *Simpson* objective lens was of the same quality as the *Wollensak* lens supplied with *Amproslide*. 3

C. Not Recommended

Argus (Argus, Inc., Ann Arbor, Mich.) $27.75. 100 watts; f:3.5 anastigmat objective lens of 4-in. focal length. Double condenser. Switch on cord. Rotary slide carrier, which had no particular advantage or disadvantage. Device for tilting satisfactory. Illumination uneven; blurred image of bulb filament appeared on the screen when slide was in focus. Lens good; in the class with those of *Amproslide* (*Wollensak* lens), *Spencer*, and *T.D.C.* projectors. Little or no danger of overheating slides unless left in the projector for a longer time than usually required for display. Would warrant a *B* rating if illumination were even. 1

Vokar (Vokar Corp., Dexter, Mich.) $15.90. 100 watts; f:3.5 lens of 4-in. focal length. Double condenser of 2 plano-convex glasses. Tilting by set screw in the base. Illumination too uneven to permit satisfactory measurement; lamp filament showed plainly through the focused image. Lens of poor quality, with bad chromatic aberration and bad curvature of field; focusing by push-pull (undesirable). 1

S.V.E., Model RK (Society of Visual Education, Inc.) $35.95, with Petzval lens. Similar to *S.V.E.*, Model RK, listed under *A. Recommended* except for lens equipment and method of focusing, which was by the undesirable push-pull method. Lens had curvature of field. 2

S.V.E., Model AK (Society of Visual Education, Inc.) $57.90, with Petzval lens. Lens equipment same as *S.V.E.*, Model RK, in immediately preceding listing. 3

Micro 16 Camera

IN an era when good cameras are scarce, the advent of a new and somewhat unorthodox camera, the *Micro 16*, has given advertising men the chance to give free rein to their imaginations which, because of a comparative lack of items with a novelty appeal, have perhaps had less than the usual amount of exercise lately.

One department store advertised ". . .in all our history we've never seen a camera like this! No wonder we are so excited, ... It's so simple to operate—even a child can use it!" Our reaction to this type of advertising is that an ordinary box camera is simpler to operate, considerably cheaper, *and* likely to produce far superior results. Far from being excited, we feel sorry for the consumer who has spent $29.50 for what we think must be classified more as a novelty than a serious photographic tool.

The only unusual features of this camera are its size (which is about the same as a packet of cigarettes—2⅞ in. x 2 in. x 1 in.) and the fact that it uses special 16 mm. film. The film, which is supplied in a cartridge or magazine, is sold at $1 per strip, sufficient for only twelve exposures; the price includes finishing and making 12 enlargements, each about 2-3/16 in. x 2⅞ in. On this basis, the prints cost 8⅓ cents each. (Pictures made with regular No. 127 or No. 120 film with a standard camera would cost between 11 and 15 cents each.)

No pictures were obtained on the first roll exposed, evidently through failure of the shutter to operate, and in returning the developed film, the manufacturer sent another roll of film, with the statement that apparently some trouble was being encountered. After the second roll of film was sent for finishing, the manufacturer requested that the camera be returned for "free" adjustment, and sent a replacement camera in return for the one turned in.

Prints finally obtained were disagreeably grainy, which is difficult to understand in view of the quite moderate degree—about 6 times—of enlargement. Prints were very unsharp, as was to be expected, since the lens was of the ordinary, very in-

expensive simple achromatic type used in ordinary cheap box cameras. Such lenses produce pictures sharp enough for contact prints, if the user is not too critical, but not nearly good enough for enlargement.

The quality of finishing was about equal to the average found in CR's tests of commercial finishing; apparently there was no attempt to choose the best grade of paper for the negative, and the ferrotyping was poor, with cracks on the surface of the prints.

C. Not Recommended

Micro 16 (Wm. R. Whittaker Co., Ltd., 915 N. Citrus Ave., Los Angeles 38) $29.50. Weight, 7 oz. Simple achromatic lens, fixed focus. Single shutter speed, exposures being controlled by means of 3 stops marked "Bright," "Dull," and "Color." Film advanced by means of a push-rod device. (When not in use, this rod is held in camera by means of a gravity-operated catch which locks when camera is turned on its back.) Exposure numbers appear on a dial viewed through an opening in the camera body. Quality of lens, poor. Film-advancing mechanism required care in operation to prevent film being moved without having been exposed. This camera, which is a long way from being as good an instrument as it might be, is not considered suitable for serious picture taking, though it might be of some interest to persons interested in extreme compactness in a camera who wants pictures only as souvenirs. 3

★ Motion Picture Film ★

THE CONSUMER who wishes to save money on the purchase of film for his movie camera may be tempted to purchase a brand known as *Kin-o-lux*, which in the 8 mm. size sells at $1.65, for 25 ft. of double eight compared to around $2.50 for *Kodak* and other well-known brands. Unfortunately the quality of *Kin-o-lux* as purchased by CR proved to be substandard, and it seems evident that the purchaser would be taking a risk in buying this cut-price film. A roll was exposed in a *Bell & Howell 8 mm. Sportster* camera and returned to Kin-o-lux Inc. for finishing. When projected, several light patches without image or only partial image were noted to occur at intervals, indicating that the film had been fogged. (This probably occurred when loading the camera for the second trip of the film through the camera, and in removing the fully exposed spool, since the spool was then presumably less tightly wound than when it left the factory.) Some sections of the film were less sharp when projected than others, yet when examined with a magnifying glass, different frames were found to be uniformly sharp. The lack of sharpness when projected was due to the fact that the film did not pass through the projector properly. The *Kin-o-lux* product was found to be extremely "sweepy," as the term is used in the trade, and also varied in width as much as ½ mm. *Kin-o-lux* film was edge-marked "DuPont Safety Film 12 993" and it might perhaps be assumed that it either was not inspected, or was purchased from the manufacturer or from some other source as "seconds" or "reject" material.

To be sure that the sample tested was representative, a second roll of film was purchased and tested. Results obtained were similar to those on the first sample.

Motion picture film should be packaged in a metal can, sealed with "Scotch tape" or similar material, to diminish so far as possible, effects of changes in moisture content of the air. *Kin-o-lux* film was packed in cardboard boxes.

Mowing the Lawn

THE most important piece of advice for the man who mows the lawn is "Don't cut it too short," since the desire to produce that close-clipped well-barbered look often lures the homeowner to set his mower to cut too closely for the good of the turf. In early spring when the grass is growing rapidly, it can be cut shorter without damage, but during the summer season, the mower should be adjusted for at least a 1½-inches cut, with a higher cut (2 to 3 inches) in dry weather. Even 1½ inches is considered by many a high cut, and more frequent mowings are required, but 1½ inches or more will produce a better quality lawn throughout the season than it is possible to obtain by closer mowing. It is best to leave lawns fairly long for good wintering, and when cutting starts in the spring, the grass should not be reduced to a short length in one cutting as this can damage the turf. Clippings should be removed from lawns only when they are so heavy that they will mat over the growing grass sufficiently to smother it. Oil the lawn mower every time it is used, and keep it sharp.

PHONOGRAPH RECORDS

By Walter F. Grueninger

Please Note: Prices quoted do not include taxes. In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

Foreign Recordings

MARK down as a major development in recent months the wider distribution of foreign recordings in this country.

Columbia again presses a few English Columbia masters, principally post-war recordings. Notable is the release of Handel's *The Messiah*—Columbia Set 666.

Victor presses recent Beecham items, among others, and writes me they "will certainly bring out any material recorded abroad which we feel will enhance our catalog." Included in the sets Victor stocks for the first time in years is the outstanding Glyndebourne Festival recording of Mozart's *The Marriage of Figaro*—Victor Sets 313/4/5. Unfortunately, the new pressings, compared with the old, reveal less clarity and more surface noise.

Decca imports records of its London affiliate, which New York dealers inform me are in great demand, despite the price of $2 each. On the whole, I find them a superior product with fidelity, on the average—though subject to variation—above that of domestic brands. To hear the higher frequencies, however, you must bear the surface noise. Overcutting, particularly of inner grooves, causes distortion, too, unless your pickup is compliant. I shall continue to rate new releases in this series, so far as space permits, emphasizing selections not available in domestic catalogs. . .or so old that the new recordings are needed. Subscribers owning record changers should buy these records with the understanding they may be returned if they do not work on their changer. The diameter is short of 12 inches. The manufacturer informs me that no more of these records will be imported until the English plant retools to correct this condition, a period of about one month.

Certain Parlophone records, imported from England, are "available wherever Decca records are sold." All listed in a booklet now found on dealers' counters were first released over a decade ago, many under domestic Columbia and domestic Decca labels at about half the current price. Those of Lotte Lehmann, Lina Pagliughi, Conchita Supervia, Ebe Stignani, and Richard Tauber were recorded when these sterling artists were at the crest of their careers. Where does one find their equals in the younger generation? Excellent, too, are the Mozart and Beethoven sonatas for violin and piano played by Goldberg and Kraus. I have just purchased from this list a disk of Pagliughi singing Donizetti, Tauber singing Mozart, and Stignani singing Saint Saens and Donizetti, principally to see how the current pressings were coming through. Surfaces are quiet and recommended. Fidelity rates B on Tauber and A on the other two. Here is treasure, indeed. Prices: 12-inch disks, $2; 10-inch disks, $1.50.

Vox now distributes imported Polydor records and presses from Polydor masters. Some performances are relatively recent whereas others, such as Beethoven's *Missa Solemnis* and Ravel's *Bolero*, were recorded about 15 years ago and released by domestic Brunswick at less than half the current price of about $2 a disk.

Under the Compass label come records from the USSR. I have already reported on several sets. Of the score of single disks I have heard, I recommend four for performance, fidelity, comparatively quiet surfaces, and distinctive "Russian flavor": *Evening on the Roadstead* sung by the USSR Ensemble (C143); Shaklovitov's Aria from *Khovanstchina* sung by Ivanov (C12732); *When I was Working as a Mail Express Coachman* sung by Lemeshev (C10156); Dunia and Kalinka sung by the USSR Ensemble (C7695). All disks are 10 inch. C12732 retails for $1.25, the others for $1.

Italian Cetra at $3.25; French Lumen and Pathe at $2; English Columbia and His Master's Voice at $2 to $2.50 are available in a few shops, too.

So broadens the field of selection, to which I shout "Bravo!"

ORCHESTRA

Auber: *Masaniello*—Overture. London Symphony Orchestra under Olof. 2 sides, Decca K1314. $2. Light overture, well played. Distortion in loud passages of closing measures.
Interpretation AA
Fidelity of Recording A

Bellini: *Norma*—Overture & **Tchaikovsky:** *Opritschnik*—Overture. National Symphony Orchestra (England) under Fistoulari. 2 sides, Decca K 1201. $2. The notable Bellini work overshadows the weak Tchaikovsky. Fine performance and spacious recording.
Interpretation AA
Fidelity of Recording AA

Caillet: *Variations on "Pop Goes the Weasel."* Carnegie Pops Orchestra under O'Connell. 2 sides, Columbia 4368. 75c. Amusing.
Interpretation A
Fidelity of Recording A

Coates: *The Three Elizabeths.* National Symphony Orchestra (England) under the composer. 4 sides, Decca Set EDA 8. $5. Charming suite. Excepting for some surface noise, I have nothing but the highest praise for this set.
Interpretation AA
Fidelity of Recording AA

Dvorak: *New World Symphony*—Excerpt from the Largo & **Traditional:** *Londonderry Air.* Sigmund Romberg & His Orchestra. 2 sides, Victor 11-9223. $1. Tasteless arrange-

ment, second rate performance and recording of lovely melodies. **Interpretation B**
Fidelity of Recording B

Fauré: *Sicilienne* & **Stravinsky:** *Fireworks.* Chicago Symphony Orchestra under Defauw. 2 sides, Victor 11-9447. $1. A pleasant Fauré and an early Stravinsky. **Interpretation A**
Fidelity of Recording A

Franck: *Le Chasseur Maudit.* London Symphony Orchestra under André. 4 sides, Decca Set EDA 20. $5. Symphonic poem which reveals Franck in a rare, conventional mood. The program concerns a wicked count who goes hunting when he should go to church. Extraordinary performance and recording. **Interpretation AA**
Fidelity of Recording AA

Gounod: *Faust*—Ballet Music. National Symphony Orchestra (England) under Fistoulari. 4 sides, Decca Set EDA 11. $5. Good musicianship characterizes the performance of these ballet scenes. The recording of the last three sides is superb but distortion mars the loud passages of side one.
Interpretation AA
Fidelity of Recording A

Khachaturian: *Masquerade* (5 sides) & **Kabalevsky:** *Fete Populaire* (1 side). Santa Monica Civic Symphony Orchestra under Rachmilovich. Asch Set 800. $5.35. Rachmilovich makes a delightful thing of this nostalgic suite, a far cry, with the exception of the witty Galop, from the composer's famous piano concerto. Dry, hard recording with a particularly sad side 5. Audible surfaces. **Interpretation AA**
Fidelity of Recording B

Mendelssohn: *Reformation* Symphony (7 sides) & **Mozart:** *La Clemenza di Tito*—Overture (1 side). London Philharmonic Orchestra under Beecham. Victor Set 1104. $4.85. Uninteresting symphony. Played expressively, though Beecham has done better work. Recording lacks wide range. Somewhat better than competitive Columbia Set 391.
Interpretation A
Fidelity of Recording B

Tchaikovsky: *Eugen Onegin*—Waltz & Polonaise. Lively, enjoyable music.

The Hallé Orchestra under Sargent. 2 sides, Columbia 71929. $1. Robust performance well recorded.
Interpretation A
Fidelity of Recording AA

London Philharmonic Orchestra under Beecham. 2 sides, Victor 11-9421. $1. Played with nuance, smoothly recorded though lacking wide range of the best new records. My choice of these disks. **Interpretation AA**
Fidelity of Recording A

Tchaikovsky: *Symphony No. 2* ("Little Russian"). Minneapolis Symphony Orchestra under Mitropoulos. 10 sides, Columbia Set 673. $6. The Tchaikovsky of the ballets dominates the score. Performance drags. Recording lacks resonance and cohesion. Inferior to the Goosens-Cincinnati Victor Set 790 which costs only $4.85. **Interpretation B**
Fidelity of Recording B

Marek Weber Musicale. Weber & His Orchestra. 8 sides, Columbia Set 118. $3. A treacly-toned violin featured in some disturbing arrangements, some good, of eight familiar numbers, all slow—"Humoresque," "Souvenir," "Old Refrain," "Salut D'Amour," etc. **Interpretation B**
Fidelity of Recording AA

CONCERTO

Bartok: *Concerto No. 3.* Gyorgy Sandor (piano) and the Philadelphia Orchestra under Ormandy. 6 sides, Columbia Set 674. $4. The work, dating from 1945, was Bartok's last. Based on Hungarian folkmusic, utilizing modern harmonies. Definitive performance, good recording. **Interpretation AA**
Fidelity of Recording AA

Delius: *Concerto for Violin.* Albert Sammons (violin) and the Liverpool Philharmonic Orchestra under Sargent. 6 sides, Columbia Set 672. $4. Dreamy, relaxing music that may not qualify as great, but makes good listening at times. The soloist gave the work its first performance in 1919. Although his tone lacks the sheen of some American virtuosi, he is able. The recording places the soloist farther from the mike, in relation to the orchestra, than usual. **Interpretation A**
Fidelity of Recording A

Prokofieff: *Concerto No. 3.* Dimitri Mitropoulos (pianist and conductor) and the Robin Hood Dell Orchestra of Philadelphia. 6 sides, Columbia Set 667. $4. A complex, difficult work dating from 1921, likely to appeal to few. Perhaps Mitropoulos would have done better if he had not attempted two jobs at the same time. **Interpretation A**
Fidelity of Recording AA

VOCAL

Heritage Series. The second release of plastic re-issues of original Victor masters recorded during the first two decades of this century but out of the catalog for years includes the following disks: Pasquale Amato sings two seldom heard arias from *Verdi* on Victor 15-1005; Celestina Boninsegna sings arias from *Aida* and the *Masked Ball* on Victor 15-1006; Pol Plancon sings an aria from the *Magic Flute* and two songs on Victor 15-1007; Jeanne Gerville-Reache sings "Habanera" from *Carmen* and the "Chanson du Tigre" from *Paul et Virginie* on Victor 15-1008; John McCormack and G. Mario Sammarco do the duet from Act IV of *La Boheme* and Lucrezia Bori and John McCormack sing an aria from *Traviata* on Victor 15-1009. Fidelity ranks considerably lower, of course, than that of today but higher than you'd expect if you have heard only the original shellac pressings. Top honors go to the Boninsegna and Gerville-Reache disks. The records list at $3.50. Victor now sells an album with appropriate lettering in which disks of this series may be filed.

LIGHT, FOLK, AND MISCELLANEOUS

Loewe: *Brigadoon.* Original Broadway Cast. 10 sides, Victor Set P 178. $4.50. As so frequently happens when the original cast of a musical play records the music only, weaknesses become evident. The voices are no more than satisfactory. **Interpretation B**
Fidelity of Recording B

Rodgers and Hart Selections. Berle, Garrett, Greene, Damone (singers). 8 sides, Victor Set P 170. $3.75. "Manhattan," "Falling in Love with Love," "This Can't Be Love," etc. Mediocre singing, comedy that palls quickly.
Interpretation C
Fidelity of Recording AA

Music of Richard Rodgers. Kostelanetz and His Orchestra. 8 sides, Columbia Set 655. $5. Some good tunes here—"My Heart Stood Still," "If I Loved You," "Lover," etc. But thickly padded to stretch them out to eight sides. Fussy performance. **Interpretation A**
Fidelity of Recording AA

Romberg: *Blossom Time.* Wrightson, Dame, Briney, etc. (singers). Al Goodman and His Orchestra. Victor Set P 173. $3.75. Operetta favorites based on Schubert melodies. Least successful set of this series. **Interpretation B**
Fidelity of Recording A

Gene Autry's Western Classics (singer). 8 sides, Columbia Set C 120. $3. A collection of favorites—"Red River Valley," "Mexicali Rose," etc.—sung poorly. **Interpretation C**
Fidelity of Recording A

Cowboy Classics. Sons of the Pioneers (vocal group). 8 sides, Victor Set P 168. $2.75. Included are "Cool Water," "Blue Prairie," "Timber Trail," "Cowboy Camp Meetin'," etc. Rather well sung and played by a sextet. They go off the deep end, however, in "Trees." **Interpretation A**
Fidelity of Recording A

A Date with Dinah. Dinah Shore (vocalist). 8 sides, Columbia Set C 125. $3.40. Millions loudly applaud Dinah Shore's "singing" but I am not among them. Here she performs the songs she loves best—"Dixie," "Kerry Dance," "Thrill is Gone," "After I Say I'm Sorry," etc. **Interpretation B**
Fidelity of Recording A

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, The Christian Century, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety* (weekly), and *Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, Magnacolor, or Vitacolor)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
2	2	10	**Abie's Irish Rose**	*com AYC*
—	2	2	**Adventures of Don Coyote**	*mus-wes-c AYC*
2	10	—	**Adventuress, The**	*war-mel A*
—	—	7	**Affairs of Geraldine**	*mus-com A*
—	2	5	**Alias Mr. Twilight**	*cri-mel A*
—	5	2	**Angel and Sinner**	*dr A*
—	11	2	**Angel and the Badman**	*wes AYC*
—	5	2	**Apache Rose**	*mus-wes-c AYC*
—	2	3	**Appassionata**	*mus-dr A*
—	7	2	**Arnelo Affair, The**	*mys-mel A*
—	1	7	**Backlash**	*mys-mel A*
—	4	5	**Bamboo Blonde, The**	*mus-war-rom A*
—	3	5	**Banjo**	*dr AYC*
—	4	2	**Barber of Seville, The**	*mus-dr AY*
—	2	13	**Beast with Five Fingers, The**	*cri-mel A*
—	2	6	**Beat the Band**	*mus-com A*
—	1	2	**Beauty and the Bandit**	*wes AYC*
—	9	4	**Bedelia**	*cri-dr A*
—	6	3	**Before Him All Rome Trembled**	*war-mus-dr A*
3	11	6	**Beginning or the End, The**	*war-dr AYC*
1	2	3	**Bellman, The**	*mel A*
—	1	3	**Bells of San Fernando**	*mel A*
9	5	1	**Best Years of Our Lives, The**	*war-dr A*
—	1	6	**Betty Co-ed**	*mus-com A*
—	3	2	**Big Fix, The**	*mel AY*
—	2	4	**Big Town**	*dr A*
—	8	5	**Blaze of Noon**	*dr AYC*
—	2	4	**Blind Spot**	*mys-mel A*
—	3	3	**Blondie's Big Moment**	*com A*
—	3	4	**Blondie's Holiday**	*com AYC*
2	13	1	**Boomerang**	*cri-mel A*
—	1	2	**Border Feud**	*wes AY*
—	4	10	**Born to Kill**	*cri-mel A*
—	—	7	**Born to Speed**	*mel AYC*
—	1	6	**Boston Blackie and the Law**	*cri-mel AY*
—	2	2	**Boy! What a Girl**	*mus-com AY*
—	6	9	**Brasher Doubloon, The**	*mys-mel A*
—	1	2	**Bridge of Sighs**	*mel A*
—	8	2	**Buck Privates Come Home**	*com AYC*
—	—	4	**Buffalo Bill Rides Again**	*wes AYC*
1	7	1	**Cage of Nightingales, A**	*dr A*
—	5	10	**Calcutta**	*cri-mel A*
—	5	4	**Calendar Girl**	*mus-com AY*
1	10	5	**California**	*wes-c A*
1	7	4	**Captive Heart, The**	*war-dr AY*
1	7	1	**Carmen**	*dr A*
—	7	5	**Carnegie Hall**	*mus-dr A*
—	7	3	**Carnival in Costa Rica**	*mus-com-c AY*
—	2	4	**Carnival of Sinners**	*dr A*
—	6	3	**Cheyenne**	*mus-wes A*
1	7	3	**Children of Paradise**	*dr A*
—	—	7	**Cigarette Girl**	*mus-com A*
—	1	2	**Citizen Saint**	*doc-dr AYC*
—	1	3	**Clandestine**	*war-dr A*
—	3	3	**Code of the West**	*wes AYC*
1	4	1	**Copacabana**	*mus-com A*
—	4	—	**Cynthia**	*com AYC*
—	1	7	**Danger Street**	*cri-mel A*
—	4	6	**Dangerous Millions**	*cri-mel AYC*
—	2	3	**Dangerous Venture**	*wes AYC*
—	4	5	**Dark Delusion**	*dr AY*
—	7	10	**Dead Reckoning**	*mel A*
—	2	2	**Death Valley**	*mel-c AYC*
—	2	2	**Desperate**	*cri-mel AY*
1	—	4	**Devil on Wheels, The**	*mel AYC*
—	7	3	**Devil Thumbs a Ride, The**	*mel A*
—	3	2	**Devil's Hand, The**	*fan A*
—	4	3	**Dick Tracy versus Cueball**	*mel A*
—	1	2	**Dick Tracy's Dilemma**	*cri-mel A*
—	5	5	**Dishonored Lady**	*dr A*
—	—	3	**Don Ricardo Returns**	*rom-dr A*
3	5	7	**Duel in the Sun**	*wes-c A*
—	3	11	**Easy Come, Easy Go**	*com A*
—	11	3	**Egg and I, The**	*com A*
—	1	2	**Escape Me Never**	*dr A*
—	7	3	**Fabulous Dorseys, The**	*mus-biog AYC*
—	5	3	**Fabulous Suzanne, The**	*com A*
—	2	7	**Falcon's Adventure, The**	*cri-mel AYC*
—	2	6	**Fall Guy**	*mys-mel AY*
2	13	—	**Farmer's Daughter, The**	*com A*
—	8	4	**Fear in the Night**	*cri-mel AY*
—	1	2	**Fighting Frontiersman, The**	*wes AYC*
—	1	3	**For the Love of Rusty**	*dr AYC*
—	6	5	**Framed**	*mel A*
—	3	2	**Francis the First**	*fan AY*
—	2	2	**Fun on a Weekend**	*com A*
—	2	1	**Genius and the Nightingale, The**	*dr A*
—	1	4	**Ghost Goes Wild, The**	*com A*
—	1	3	**Ginger**	*dr AYC*
10	6	1	**Great Expectations**	*nov AYC*
1	8	6	**Guilt of Janet Ames, The**	*dr A*
—	6	1	**Guilty, The**	*mys-mel A*
—	2	1	**Gunman's Code**	*wes AYC*
—	—	4	**Hard Boiled Mahoney**	*mel A*
—	4	2	**Heldorado**	*mus-wes AYC*
—	2	4	**Her First Affair**	*dr A*
—	7	1	**High Barbaree**	*dr AYC*
—	6	—	**High Conquest**	*adv A*
—	7	2	**Hit Parade of 1947**	*mus-com AY*
—	4	—	**Homesteaders of Paradise Valley**	*wes AYC*
—	5	8	**Homestretch, The**	*dr-c A*
—	5	8	**Honeymoon**	*mus-com A*
—	—	3	**Hoppy's Holiday**	*wes AYC*
1	8	9	**Humoresque**	*mus-dr A*
—	4	3	**I Cover Big Town**	*cri-mel A*
—	3	1	**I Live as I Please**	*mus-dr AYC*
—	8	7	**I'll Be Yours**	*mus-com A*

A	B	C		
—	4	8	Imperfect Lady, The	*dr A*
2	13	—	It Happened in Brooklyn	*mus-com AYC*
—	8	—	It Happened on Fifth Avenue	*mus-dr A*
—	3	4	It's a Joke, Son!	*com A*
7	8	1	It's a Wonderful Life	*dr AY*
—	4	8	Ivan the Terrible	*hist-dr A*
2	5	—	Jericho	*war-dr A*
—	1	5	Jewels of Brandenburg	*cri-mel AY*
—	8	8	Johnny O'Clock	*mys-mel A*
—	1	7	Jungle Flight	*dr A*
—	2	1	Killer Dill	*cri-com A*
—	2	4	King of the Wild Horses	*mus-mel AYC*
—	3	8	Ladies' Man	*com A*
—	1	3	Lady Chaser	*mel AY*
1	13	2	Lady in the Lake	*cri-mel A*
—	—	3	Land of the Lawless	*wes A*
—	2	3	Landrush	*mus-wes AYC*
2	11	2	Late George Apley, The	*nov A*
—	—	6	Law of the Lash	*wes AYC*
—	2	2	Lawless Breed	*mus-wes AYC*
—	1	2	Life Begins Anew	*dr A*
—	1	4	Lighthouse	*dr A*
—	3	4	Likely Story, A	*com A*
—	9	8	Locket, The	*mel A*
—	1	3	Lone Hand Texan, The	*mus-wes AYC*
—	1	2	Lone Star Moonlight	*mus-wes A*
—	2	5	Lone Wolf in Mexico, The	*mys-mel A*
—	5	2	Lost Honeymoon	*com AY*
—	3	6	Love and Learn	*mus-com A*
—	8	5	Love Laughs at Andy Hardy	*mus-com AY*
—	7	9	Macomber Affair, The	*dr A*
—	4	2	Magic Bow, The	*mus-nov AYC*
1	10	5	Magnificent Doll, The	*hist-dr A*
—	1	5	Magnificent Rogue, The	*com A*
—	1	5	Man from Morocco, The	*mel A*
—	6	8	Man I Love, The	*mus-mel A*
—	7	5	Man's Hope	*war-dr A*
—	4	4	Michigan Kid	*wes-c AYC*
—	8	5	Mighty McGurk, The	*dr AYC*
—	1	5	Millie's Daughter	*dr A*
3	3	—	Miracle on 34th Street	*com AYC*
1	3	5	Monsieur Verdoux	*dr A*
—	7	4	Mr. District Attorney	*cri-mel A*
—	5	1	Mr. Hex	*mel AYC*
—	6	1	Murder in Reverse	*cri-mel A*
—	6	2	My Brother Talks to Horses	*com AYC*
1	13	—	My Favorite Brunette	*com AY*
—	3	—	Navajo Trail, The	*wes AYC*
—	6	7	Never Say Goodbye	*com A*
—	5	3	New Orleans	*mus-dr A*
—	3	13	Nora Prentiss	*dr A*
—	3	1	Northwest Outpost	*mus-rom A*
4	7	4	Odd Man Out	*dr A*
—	7	6	Other Love, The	*mus-dr A*
—	4	2	Out California Way	*mus-wes-c AYC*
—	—	4	Outlaw of the Plains	*wes AYC*
—	—	4	Over the Sante Fe Trail	*mus-wes AYC*
2	8	2	Overlanders, The	*dr AYC*
—	3	2	Paris Frills	*dr A*
—	1	3	Patient Vanishes, The	*cri-mel A*
—	6	9	Perfect Marriage, The	*com A*
—	—	5	Phantom Thief, The	*cri-mel A*
—	2	3	Philo Vance Returns	*mys-mel A*
—	—	6	Philo Vance's Gamble	*mys-mel A*
—	3	5	Pilgrim Lady, The	*com A*
—	7	3	Plainsman and the Lady, The	*wes AY*
—	4	11	Private Affairs of Bel Ami, The	*dr A*
—	10	4	Pursued	*wes A*
1	1	2	Queen for a Night	*mus-rom A*
—	—	4	Queen of the Amazons	*mel A*
—	1	2	Raiders of the South	*mus-wes AYC*
—	1	2	Rainbow over the Rockies	*mus-wes AYC*
1	4	5	Ramrod	*wes A*
—	4	1	Range Beyond the Blue	*mus-wes AYC*
1	11	5	Razor's Edge, The	*dr A*
—	12	2	Red House, The	*cri-dr A*
—	2	1	Renegade Girl	*mel A*
—	6	5	Return of Monte Cristo	*mel A*
—	1	2	Riding the California Trail	*wes AYC*
—	3	—	Road Home, The	*war-dr A*
—	2	3	San Demetrio, London	*war-mel AY*
—	5	9	San Quentin	*mel A*
—	3	2	Sarge Goes to College	*mus-com AY*
—	8	8	Sea of Grass	*wes-dr A*
1	12	5	Secret Heart, The	*mus-mel AY*
—	1	6	Secret of the Whistler	*mys A*
—	5	4	Seven Were Saved	*war-mel A*
—	—	3	Shadows on the Range	*wes AYC*
—	9	4	Shocking Miss Pilgrim, The	*mus-com-c AY*
—	3	1	Shoot to Kill	*cri-mel A*
—	1	3	Silver Range	*wes AYC*
—	8	—	Sin of Harold Diddlebock, The	*com A*
—	12	3	Sinbad the Sailor	*adv-c AYC*
—	1	6	Singin' in the Corn	*mus-com AYC*
1	6	—	Sioux City Sue	*mus-wes AYC*
1	10	4	Smash Up — The Story of a Woman	*mus-dr A*
1	6	8	Song of Sheherazade	*mus-dr-c AY*
—	—	3	Song of the Sierras	*mus-wes AYC*
1	10	3	Song of the South	*car-c AYC*
—	3	2	South of the Chisholm Trail	*wes AYC*
—	2	4	Spoilers of the North	*mel A*
—	2	4	Stage Coach to Denver	*wes AYC*
3	10	—	Stairway to Heaven	*fan-c A*
—	9	4	Stallion Road	*dr A*
—	1	3	Stars Over Texas	*mus-wes AYC*
—	5	3	Stone Flower	*fan-c AYC*
—	4	—	Story of the Pope, The	*doc AYC*
—	1	6	Strange Holiday	*mel A*
—	10	7	Suddenly It's Spring	*com A*
—	2	4	Susie Steps Out	*mus-com A*
—	4	3	Sweetheart of Sigma Chi	*mus-com A*
1	6	10	Swell Guy	*dr A*
—	2	4	Taras Family, The	*war-dr A*
—	4	6	Tarzan and the Huntress	*adv A*
—	2	1	Terror Trail	*wes AYC*
—	3	8	That Brennan Girl	*mel A*
—	3	6	That Way With Women	*com AY*
—	6	5	That's My Man	*dr AY*
—	4	1	They Won't Believe Me	*mel A*
1	14	3	13 Rue Madeleine	*war-mel AYC*
—	3	3	Thirteenth Hour, The	*cri-mel AY*
1	10	2	This Happy Breed	*dr-c AY*
—	5	3	Three on a Ticket	*mys-mel AY*
—	3	—	Thunder Mountain	*wes AYC*
4	11	3	Till the Clouds Roll By	*mus-biog-c AY*
—	2	14	Time Out of Mind	*nov A*
—	8	7	Time, the Place, and the Girl, The	*mus-com-c A*
1	5	2	Torment	*dr A*
—	6	6	Trail Street	*mus-wes AYC*
—	2	2	Trail to San Antone	*mus-wes AYC*
—	—	6	Trap, The	*mys-mel A*
—	4	2	Trouble With Women, The	*com A*
—	—	5	Tumbleweed Trail	*mus-wes AYC*
—	4	2	Turning Point, The	*war-dr A*
—	2	3	Twilight on the Rio Grande	*mus-wes AYC*
—	1	3	Two Anonymous Letters	*war-dr A*
—	5	9	Two Mrs. Carrolls, The	*mel A*
—	7	—	Undercover Maisie	*com A*
—	4	—	Unexpected Guest	*wes AY*
—	3	4	Untamed Fury	*mel A*
—	—	5	Vacation Days	*mus-wes AYC*
—	1	2	Valley of Fear	*wes AYC*
—	12	4	Verdict, The	*cri-mel A*
—	4	1	Vigilantes of Boomtown	*wes AYC*
—	2	5	Violence	*mel A*
—	3	11	Wake Up and Dream	*mus-fan-c AYC*
—	7	7	Wanted for Murder	*cri-mel A*
2	6	—	Welcome Stranger	*mus-com AY*
—	1	2	West of Dodge City	*mus-wes AYC*
—	2	2	West to Glory	*mus-wes AYC*
—	7	11	Wicked Lady, The	*dr A*
—	—	4	Wild Country	*mus-wes AYC*
—	3	1	Wild West	*mus-wes-c AYC*
—	2	3	Woman on the Beach, The	*dr A*
—	3	1	Yank in Rome, A	*war-dr A*
—	1	4	Yankee Fakir	*cri-mel AY*
7	10	—	Yearling, The	*dr-c AYC*
—	7	6	Years Between, The	*nov A*
—	—	3	Youth Aflame	*dr A*

The Consumers' Observation Post

(Continued from page 4)

profits of contractors) which are up 100 percent, are blamed for the serious falling off of construction, which is dropping just at the time of the year when ordinarily the greatest activity would be expected. So serious is this decline that many thousands of building trades workmen are said to be out of a job in the New York metropolitan area alone, at the very time when veterans' and other homes are most sorely needed. Demand remains, of course, as high as ever, but not at current prices, and the building industry, including its workmen, present an interesting illustration of an industry actually pricing itself right out of its market.

* * *

LAWN SWEEPERS are back on the market. One maker claims that their use makes grass healthier, permitting sun and moisture to get right down to the roots. This claim is not justified, for it is desirable to leave the clippings on the lawn provided the lawn is cut once a week and the clippings are not too heavy. When this is done, the turf is heavy and the grass withstands hot weather better than when clippings are removed.

* * *

NEW OR NEWLY AVAILABLE: Smart-Kurl Infra-Red Heat Home Permanent Wave Set (Halgar, Inc., 251 E. Grand, Chicago), $3.98, plus tax. The wave lotion was found to have for its essential ingredients water, ammonium carbonate, sodium sulfite, fatty matter, and emulsifier. Heat to set the wave was applied in the form of two electrically heated tubes fitted into a handle which in turn plugged into an electric outlet. The tubes are allowed to heat for at least 10 minutes before being inserted in a slot in the metal curlers after the latter were in place on the hair. It was found to be difficult to guide the hot tubes

Glory Be! We have paper, and a printer to produce the *1947 Annual Cumulative Bulletin!*

Coming in September!

Some subscribers have been puzzled by the fact that for the past few months the *Annual Cumulative Bulletin* has not been listed on renewal notices. What with paper and printing going up in price and hard to get at that, we weren't taking any chances on promising a new revision of the *Annual Cumulative Bulletin* in September until we could be sure that we could deliver. Now, we are glad to say, it looks as if we shall be able to mail the *Annual* the latter part of September as heretofore. The price, however, due to higher costs for paper and other items will be $1.25, to CR Bulletin subscribers.

Since the *Annual Cumulative Bulletin* is a confidential issue, it is available only for the use of an individual and that of his immediate family. It summarizes a wide range of CR's previous findings and includes as well a considerable amount of new material that does not lend itself to presentation in the monthly issues. An advance order may be conveniently placed by using the order blank on the next page.

into the proper slots of curlers at the back of the head; hence there would be some danger of burning the hands or the hair. If a second person were present to assist, this operation could, however, be satisfactorily performed. Since only two tubes were provided, the process of doing the whole head was necessarily rather time-consuming. In the hands of a woman who has some skill at winding her hair into the proper curls and who has someone at hand to help in placing the hot tubes in the curlers the resulting wave will be reasonably satisfactory. The device is considered a more desirable method of home permanent waving, from the standpoint of health and safety, than the cold-wave method.

Modelmaker's Drill Press, distributed by Richter Tool Co., New York City, at $15.95 less motor, is a small drill press claimed to be designed not only for the hobbyist, but also for production and assembly-line work. It was equipped with a Jacobs chuck of 0 to 1/4 inch capacity, had a spindle travel of 2-1/4 inches, and two small tables (one adjustable) each 3-1/2 x 3-1/2 inches in size. The design was not good and vibration was such that it would be difficult to do any really accurate work. This, coupled with the limited capacity and light construction of the tool would indicate that any serious hobbyist would be wise to put the not inconsiderable amount of money for which the tool sells, toward a standard type of bench drill press of sturdier construction and larger capacity. A bench drill press of good make may be expected to cost somewhere around $40 (also without motor).

Bean-X is a business-like looking little kitchen gadget selling at $1 (refill 25c extra), made by G. N. Coughlin Co., West Orange, N. J. The advertising says, "Moves fast from counters because it stems, strings and slices beans in one-two time." At CR the Bean-X gadget was tried first on a sizable lot of fresh round green beans, and did a very good job. The beans were undoubtedly much more accurately sliced than would have been possible with a good sharp knife, but there was no saving of time; indeed, the time involved was considerably longer. The next beans on which the Bean-X was tried were flat and not too fresh--in fact they were a little limp. Despite the best efforts of three experimenters, it was impossible to work the beans through the slicer because there was insufficient space for passage of the wide parts of the beans, and lack of crispness added a further difficulty. After several unsuccessful trials in each of which the beans were torn and mangled but certainly not successfully cut, the conclusion was reached that if a special meal were being prepared upon which more than the usual amount of time could be spent, and if the round type of beans were available, the Bean-X could be used to prepare a dish with great "eye appeal." For everyday meals it didn't seem to be a very practical gadget.

Consumers' Research, Inc.
Washington, N. J.

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